Global Oil & Gas Analyser

Equities

Global

Oil Companies, Major

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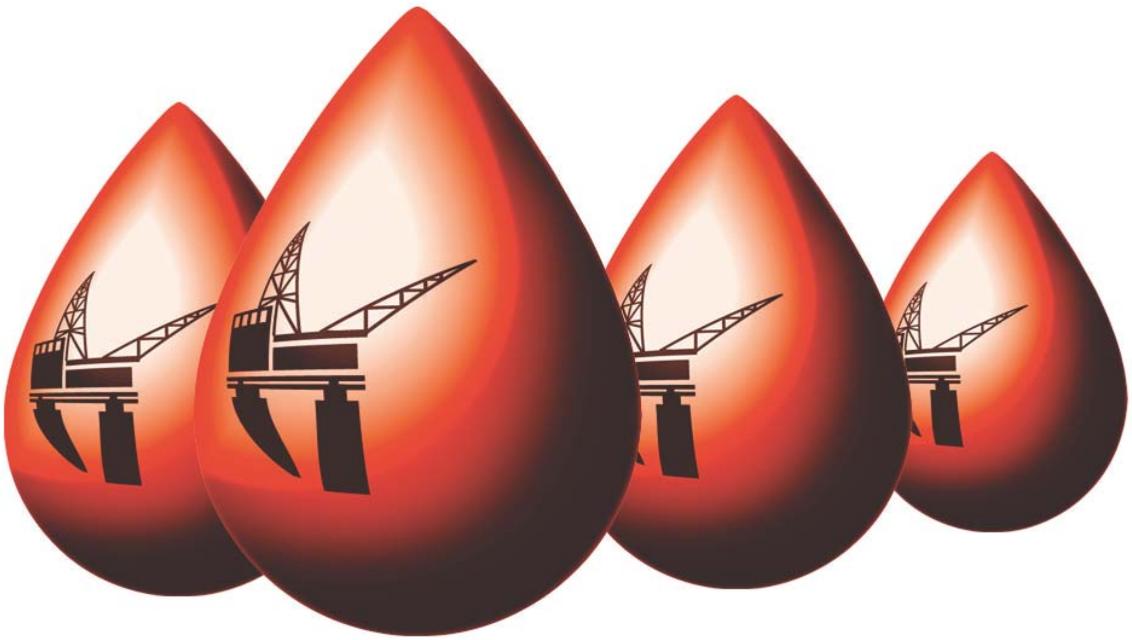

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UBS Global Oil & Gas coverage

Canada
Canadian Natural Resources
Canadian Oil Sands
Cenovus Energy
Crescent Point Energy
Encana
Enerplus
Husky Energy
Imperial Oil
MEG Energy
Suncor Energy

USA
Anadarko Petroleum
Apache
Baker Hughes
Cabot Oil & Gas
Cameron International
CB&I
Chesapeake Energy
Chevron
Concho Resources
ConocoPhillips
Continental Resources
Diamond Offshore
Denbury Resources
Devon Energy
Ensco International
EOG Resources
EP Energy
ExxonMobil
Fluor Corporation
FMC Technologies
Frank's International
Halliburton
Hess
Helmerich & Payne
Jacobs Engineering
KBR
Marathon Oil
McDermott International
Murphy Oil
Nabors Industries
National Oilwell Varco
Newfield Exploration
Noble Energy
Noble Corporation
Oasis Petroleum
Occidental Petroleum
Patterson – UTI
Pioneer Natural
Range Resources
Rowan Companies
RSP Permian
Schlumberger
SM Energy
Southwestern Energy
Transocean
Ultra Petroleum
Weatherford
Whiting Petroleum

Brazil
Petrobras
QGEP Participacoes
Ultrapar

Europe
Africa Oil
Aker Solutions
Amec Foster Wheeler
BG Group
BP
Cairn Energy
CGG
Det Norske
DNO
ENI
EnQuest
Galp
Genel Energy
Hellenic Petroleum
Hunting
Lekoil
Lundin Petroleum
MOL Group
Motor Oil
Neste Oil
OMV
Ophir Energy
Petrofac
PGS
PKN Orlen
Premier Oil
Repsol
Royal Dutch Shell
Saipem
Saras
Seadrill
SOCO Int'l
Statoil
Subsea 7 SA
TGS Nopec
Technip
Tenaris
TOTAL
Transocean
Tullow Oil
Tupras
Vallourec
Weir
Wood Group

South Africa
Sasol

Russia
Bashneft
CAT Oil
Eurasia Drilling
Gazprom
Gazprom Neft
Lukoil
Novatek
Rosneft
Surgutneftegaz
Tatneft
TMK
Transneft

Kazakhstan
KazMunaiGas EP

Israel
Avner Oil
Delek Drilling
Delek Group
Ratio Oil

India
Bharat Petroleum
Cairn India
Hindustan Petroleum
Indian Oil Corp
Oil India
ONGC
Reliance Industries

China
Anton Oilfield Services
CNOOC
CNOOC Engineering
COSL
Honghua Group
Kunlun Energy
Petrochina
Sinopec
Sinopec Engineering
Sinopec OFS
SPT Energy Group
Yantai Jereh OFS

Thailand
PTT E&P
PTT Global Chemical
PTT Public
Thai Oil

Japan
Chiyoda
MODEC

South Korea
Samsung Engineering

Philippines
Petron

Malaysia
Bumi Armada
Dialog Group
SapuraKencana Petroleum

Australia
AWE Limited
Beach Energy
Boart Longyear
Caltex Australia
Drillsearch Energy
Horizon Oil
InterOil Corporation
Karoon Gas Australia
Oil Search
Origin Energy
Santos
Tap Oil
Woodside Petroleum
WorleyParsons

New Zealand
Z Energy

Global Oil & Gas Analyser 2015[1]

Climate change

The UBS Global Oil & Gas Analyser is published annually each September and has been a product of the UBS global oil & gas team since 1998.

The September publication date of the Analyser seems to invariably coincide with some form of market turmoil. This year is no different. The global industry faces a meaningful change in the operating and financial climate and is only just beginning its response.

Why read this report? The 2015 UBS Global Oil & Gas Analyser provides data and analysis covering a key global industry. Within the note we analyse macro trends in the sector, geographic and sub-sector comparisons and present investment theses for the largest integrated and E&P companies under UBS coverage.

The Analyser includes 28 major/integrated companies and 26 E&Ps (although in some cases the distinction is becoming blurred). Together this group accounts for 39% of global oil production and 50% of global natural gas production.

Key conclusions and observations this year are:

- **Sector share prices have collapsed:** The global Integrated share prices have fallen by 38% over the past 12 months and the global E&Ps have suffered 44% declines.
- **The macro will only slowly help:** We do expect oil prices to recover but only slowly as the natural process of re-balancing the market takes place over the cycle. There is, however, already clear evidence of both short-cycle (US) production and long-cycle (conventional) investment levels reacting.
- **Balance sheets stretching:** From the peak of the cycle in 2013 to end-2016 we forecast a significant expansion in gearing across the industry as companies struggle to balance cash in and cash out in a new environment. Levels of gearing look manageable, however, as long as spending can be curtailed and fits the macro.
- **Spending reductions:** A focus on costs and capital investment/capital productivity will clearly be the mantra. It was obvious last year that returns need to improve. Now it is critical. We expect to see capex reductions of up to 30% through a combination of project deferments, deflation and self-help/improvement.
- **Growth not an agenda item:** Outside of the US unconventional we don't believe growth will be an industry objective or indeed is likely to be a shareholder demand. Unwinding unsustainably high unit capex and unit opex will be the order of the day. This will clearly have an impact on production levels and reserve additions. A reduction in organic spending and the significant decline in market values seems to suggest that M&A may begin to pick up, depending on management confidence.
- **Given expectations for a normalisation, valuations look ok.** Upside now looks interesting 12 months on from when we were significantly more cautious.

Turning to stock picks. In the large cap integrateds universe our top picks are **Royal Dutch Shell/BG** and **Statoil**. These represent the best prospects of portfolio re-orientation and upstream efficiency upside, the key themes in the sector, we believe. The European integrateds look better value than the two US integrateds at this point.

In Canada our 2 preferred names are **Suncor** and **Husky** which boast modest balance sheets, low sustaining capital requirements, and declining cost structures.

In the EM space our preferred name is **Sinopec** which benefits from lower upstream exposure, a strong balance sheet and improved corporate governance and transparency.

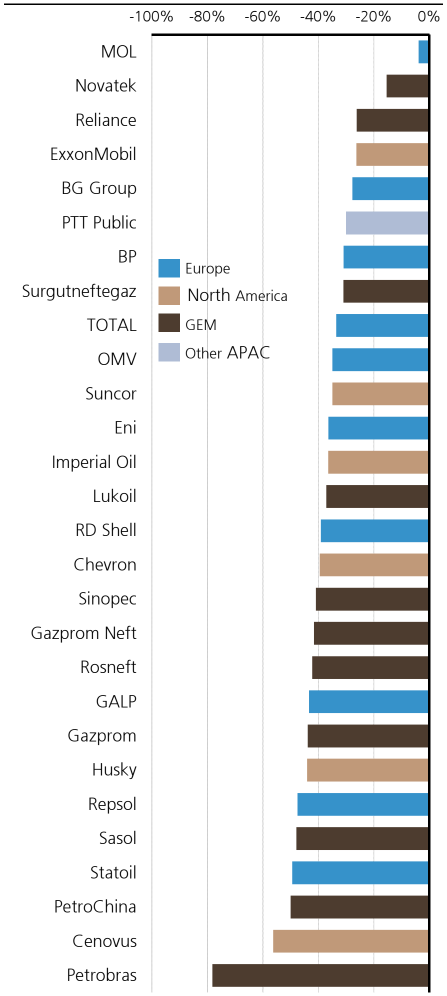
In the larger cap E&P arena within the US, our favourite pick is **Pioneer,** which screens well on quality of operations and low financial leverage and is better able to withstand the challenging commodity price environment, less susceptible to having to make material capex cuts impacting production, and can be more flexible around any opportunities that present themselves.

[1] Unless otherwise indicated, all pricing data is as of 04 September 2015

Global Oil & Gas Analyser by the numbers

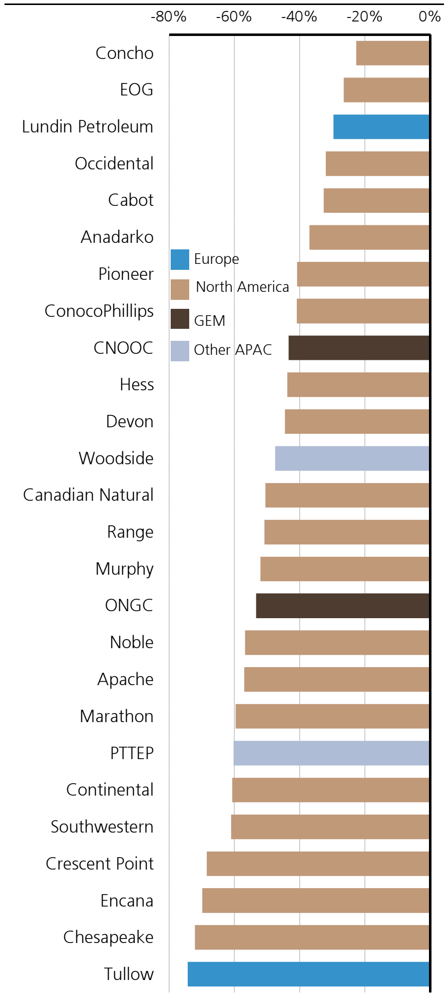
- We estimate 12-month upside for the global Majors group is +22% (2014 +8%). Upside for the E&Ps is 17% (2014 +8%).
- In the year to 30 August 2015 the global integrateds share prices fell 38% and the E&Ps 44% underperforming the MSCI World by 33% and 39%, respectively.
- We project a long-term normalised Brent oil price of $80/bbl based on an economic clearing price for marginal projects. However, we don't expect that this will be achieved until 2019.
- By 2019 we expect US liquids production to have dipped and then recovered to >14Mb/d (18% above 2014 levels, or a CAGR of 3.5% even after the 2015/16 slowdown).
- Over the medium term we expect non-US/non-OPEC to come under significant pressure. Our large projects database shows only 1.1Mboed of peak oil and gas production has been sanctioned in the year to date with a potential for a further 1.2Mboed (which must be in doubt). This compares to an average start-up figure annually of 5.2Mboed.
- We project a long-term Henry Hub natural gas price of $4/Mcf supported by growing domestic consumption and export demand. We expect the US market to grow 23% from 73Bcfd in 2014 to 90Bcfd in 2019 (4.3% CAGR).
- We similarly expect impressive growth in the global LNG market, adding 133Mtpa of new production capacity between 2014 and 2020, a 7% annual growth rate and a 50% increase in the overall market.
- We expect a normalisation of refining margins. However, the outlook appears better than it did this time last year. This is helped by oil prices but mainly a cut of 3.5Mb/d capacity previously expected to come onstream in 2015-17 and 1.3Mb/d in 2018-19.
- As a measure of the slowdown in investment, we forecast that capex for Global Oilco will decline by 25% between 2013 and 2017. This should be through a combination of project deferral, project re-engineering/self-help and cost deflation. We think there is probably upside to this figure.
- We forecast adjusted 5-year EPS growth for the global Integrateds of 9% CAGR and for the E&Ps of -7% CAGR (US -10%).
- We forecast 5-year DPS growth for the Integrateds at a flat CAGR and for the E&Ps of +2% CAGR (US +1% CAGR).
- We calculate that the Integrateds are on a 2-year EV/DACF of 5.0x (2014 5.5x); a 2-year PE of 8.4x (2014 9.0x) and a current dividend yield of 4.8% (2014 4.3%).
- We calculate the E&Ps are on a 2-year EV/DACF of 6.8x (2014 5.7x); a 2 year PE of 17.5x (2014 13.7x) and a current FCF yield of -4.0% (2014 0.7%).
- We estimate Integrateds' gearing should rise from 15% in 2013 to 23% in 2016. E&P gearing rises from 24% in 2013 to 34% in 2016E.
- From a Brent oil price perspective, we estimate the US integrateds are discounting $76/bbl, the US E&Ps $72/bbl, the European large caps $64/bbl and Canadian large cap oils $65/bbl.
- Reserve life for the Integrateds stood at 14.8 years at the end of 2014. Reserve life for the global E&Ps stood at 12.5 years at end 2014.
- Five-year average organic reserve replacement for the Integrateds stands at 101% and for global E&Ps 160%.
- 2014 average production costs for the Integrateds was $15.07/boe (+66% over 5 years). For the E&Ps it was $11.97/boe (+35% over 5 years)
- F&D costs for the Integrateds for 2014 was 30.06/boe (5-year average $27.81/boe). For the E&Ps, 2014 F&D was $21.66/boe (5-year average $21.58/boe).
- We estimate that for the Integrateds to restore upstream returns to historically normal levels at an oil price of $80/bbl they will need to cut unit opex by 30% and unit investment by 40% from 2014 levels.

Figure 1: Global Integrateds – 12-month share price performance (US$)



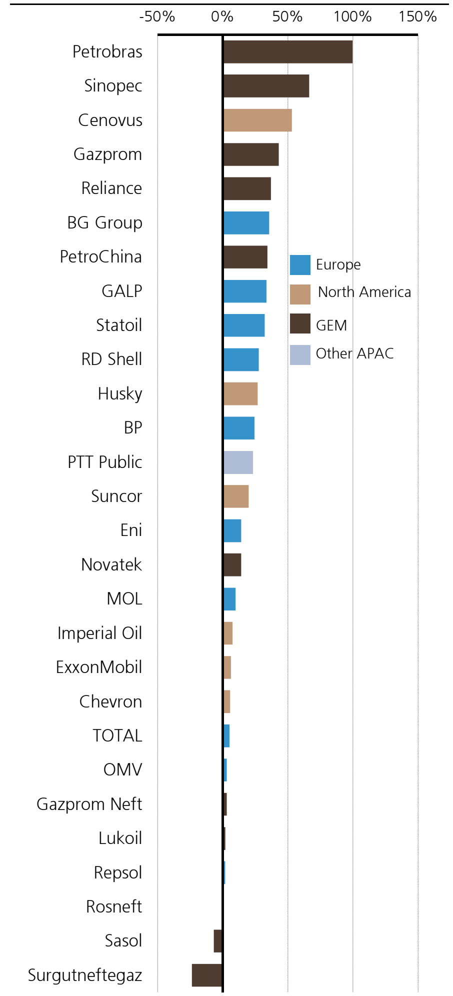
Source: DataStream, UBS. Priced as of cob 04 Sep 2015

Figure 2: Global E&Ps – 12-month share price performance (US$)



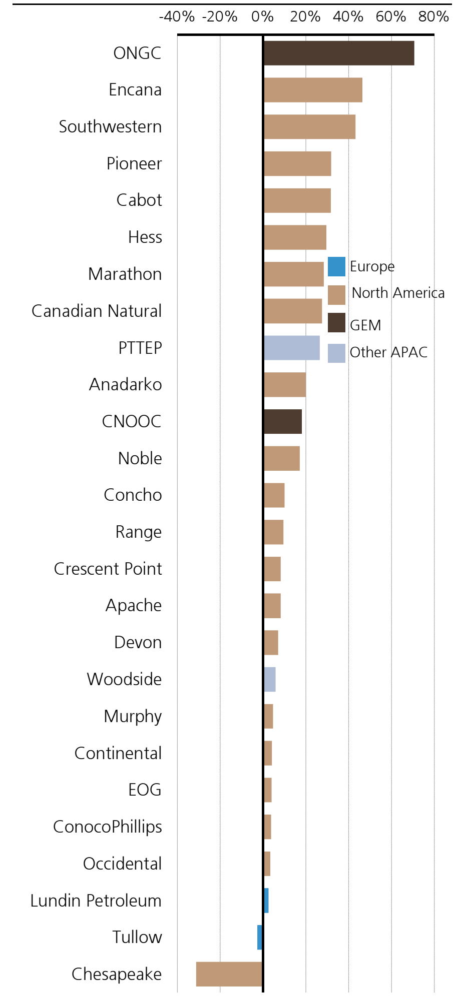
Source: DataStream, UBS. Priced as of cob 04 Sep 2015

Figure 3: Global Integrateds – Potential upside to UBS price targets



Source: DataStream, UBS. Priced as of cob 04 Sep 2015

Figure 4: Global E&Ps – Potential upside to UBS price targets

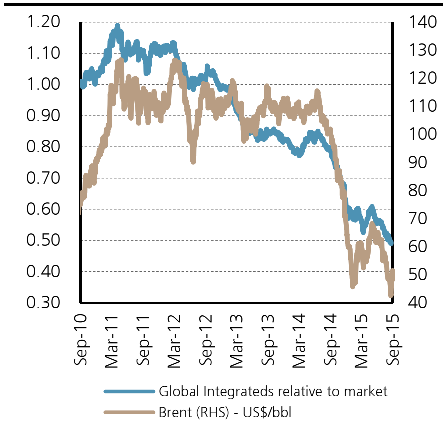


Source: DataStream, UBS. Priced as of cob 04 Sep 2015

Global sector view and stock picks

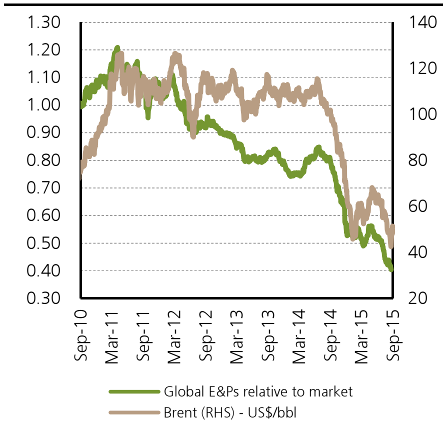
The energy sector has significantly underperformed in the past year amid the collapse in the oil price. Over the past 12 months the global integrateds' share prices fell 38% and the E&Ps 44% underperforming the MSCI World by 33% and 39%, respectively. That being said the underperformance began well before the oil price fall as capital returns and profitability began to deteriorate even while oil prices remained high. This emphasises that dissatisfaction with the controllable aspects of the energy industry has been growing for some time. The response by the energy industry needs to be an enduring, structural one and not merely a short-term reaction to the current challenging operating environment.

Figure 5: Global integrateds relative and the oil price



Source: UBS, DataStream

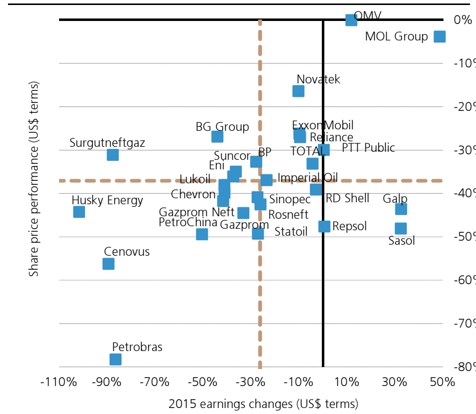
Figure 6: Global E&Ps relative and the oil price



Source: UBS, DataStream

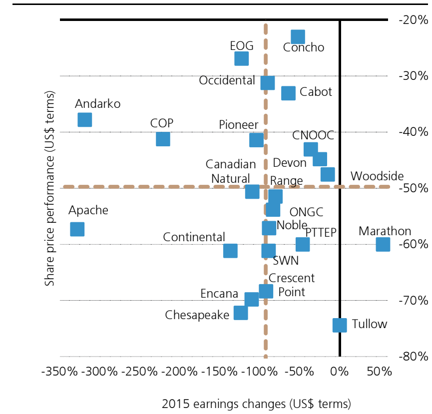
Cost reduction alone will not completely offset the fall from >$100/bbl but it can go a long way to restoring return on incremental capital. While the E&Ps will still push for volume growth, we expect the global Majors to continue pursuing value over volumes.

Figure 7: Global integrateds 2015 earnings revisions and share price performance



Source: UBS, DataStream

Figure 8: Global E&Ps 2015 earnings revisions and share price performance



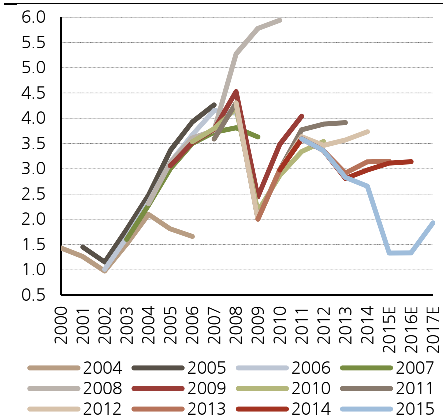
Source: UBS, DataStream

Global Oilco backdrop

Global Oilco, our aggregation of the largest integrated majors, provides us with a useful data source for trend analysis with less of the 'noise' associated with individual companies. In our analysis tables throughout this document we reference Global Oilco to aggregate and average data. At a very high level we can see the following outturns from 2015 financials and forecasts.

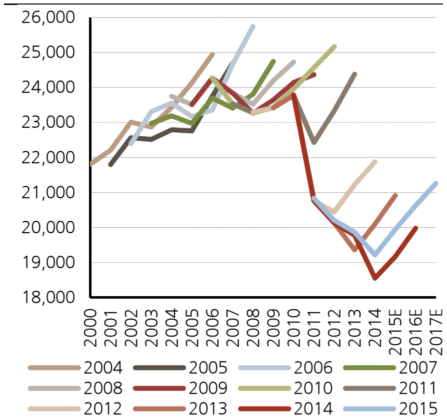
- We are showing poor EPS evolution with 2015 and 2016 troughing at levels below the financial crisis of 2009 and almost back to levels last seen in 2002 (notably when oil prices averaged $25/bbl).
- The impact of this collapse in profitability is evident in the fall in ROACE. 2015 and 2016 returns are likely to be below the cost of capital for the group. This is partly driven by the reduced top line but also impacted by the very significant build-up in capital on the balance sheet across the past 5 years or so as capex ballooned.

Figure 9: Global Oilco EPS forecasts evolution (US$)



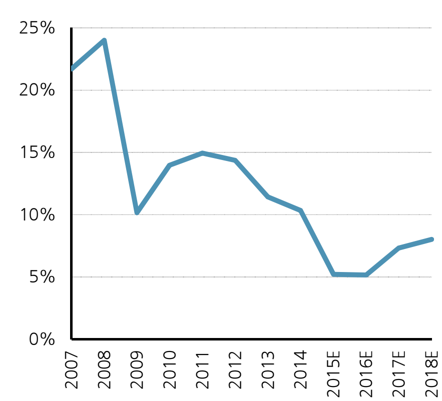
Source: UBS

Figure 10: Global Oilco production estimates evolution (kboed)



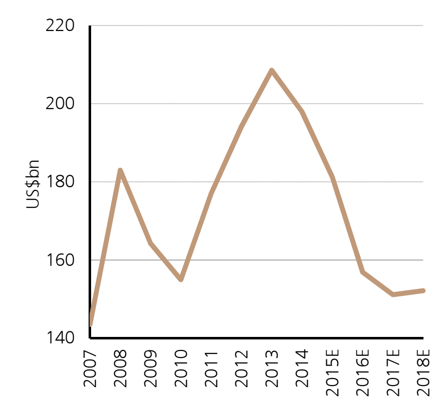
Source: UBS

Figure 11: Global Oilco ROACE



Source: UBS

Figure 12: Global Oilco capex



Source: UBS

- The response to this fall in earnings and returns is a choking off in investment. By 2017 we see capex at ~25% below the peak of 2013. In reality a combination of self-help and cost deflation may mean that the fall ends up being even more precipitous.

- In our annual exercise of reflection, we also show production estimates. These are actually higher in 2015 that they were in 2014. This is partly a function of PSC benefits than stem from the lower oil price and partly a function of some recent acquisitions (such as Total's re-entry into Adco and Repsol's purchase of Talisman). Underlying production performance has not improved

In the 2014 Analyser we commented that investors were hoping that management teams were beginning to address the disastrous trends in the sector in terms of spiralling spending, falling returns and absent growth. Historical precedent and our analysis of the addressable market suggest that sustainable, meaningful top-line growth remains an unlikely aspiration for the largest companies. However, we do believe that better cost management and improved returns is a realistic target for the companies to aspire to. Shareholder value is then generated by way of recycling capital back into value-generating projects. The collapse in the oil price in the past 12 months has removed any lingering doubt that managing down costs is the critical challenge. We are seeing significant spending reductions and alongside it measures put in place to reduce unit costs on both the capital and operating side.

Spending can be managed down in the following ways:

- Projects can be cancelled or deferred and activity slowed;

- Advantage can be taken of deflation in the supply chain;

- Processes and activities can be revisited and re-engineered to make them more efficient.

All three main actions are being pursued. In order to preserve balance sheets, because there is huge uncertainty around future financial conditions, and because there may be an opportunity to do things cheaper in the very foreseeable future, project sanctions are being held up. Our analysis of the largest projects in the industry suggests that project

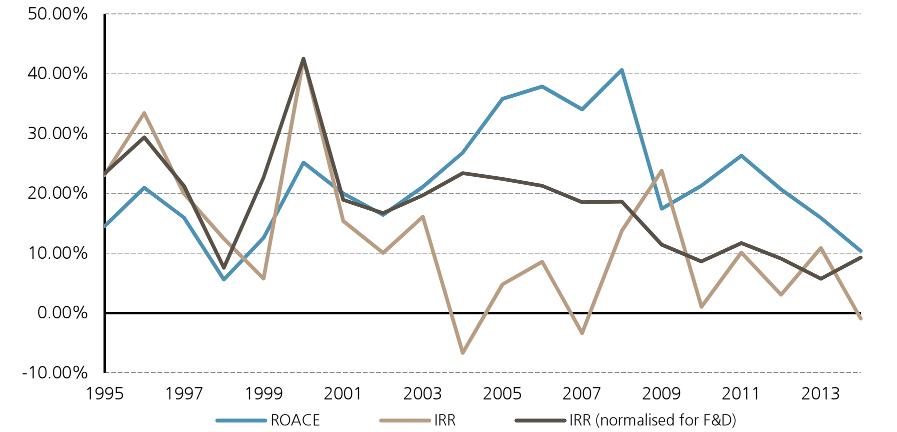
sanctions in 2014 will likely amount to between 20% and 40% of the normal level and there is every prospect that 2016 will look similar. The industry has fairly clearly been subject to significant cost inflation in the past decade. This is beginning to meaningfully unwind. Even by the end of 1Q, measures of the capital and operating cost indices were showing material falls and we expect that there is more to come. Lastly, and we believe that this is the key prize, the industry needs to focus on self-help initiatives to drive significant productivity gains through the business if it is to restore returns to a more normal level for the industry. This process is necessarily longer cycle but is still not yet widely or deeply communicated to investors at this stage.

In the chart below we show the effect of the deterioration of cost performance. The two IRR charts are calculated from a simulation of a representative oil and gas field. The standard IRR is calculated using DD&A as a proxy for unit capital invested. The second line shows the even poorer implied performance if we use F&D as a proxy for capital invested. Both show that with the current cost conditions the prospective rate of returns are between 0% and 10%, below the historical levels of 15-20% and obviously not generating significant risk-adjusted shareholder value. Worryingly, using F&D as a proxy for unit capex, the prospective rate of return even at $100/bbl was zero.

We calculate that to restore mid-teens rates of return at $80/bbl (UBSe normalised), unit costs need to be reduced by 40% and opex by 30%.

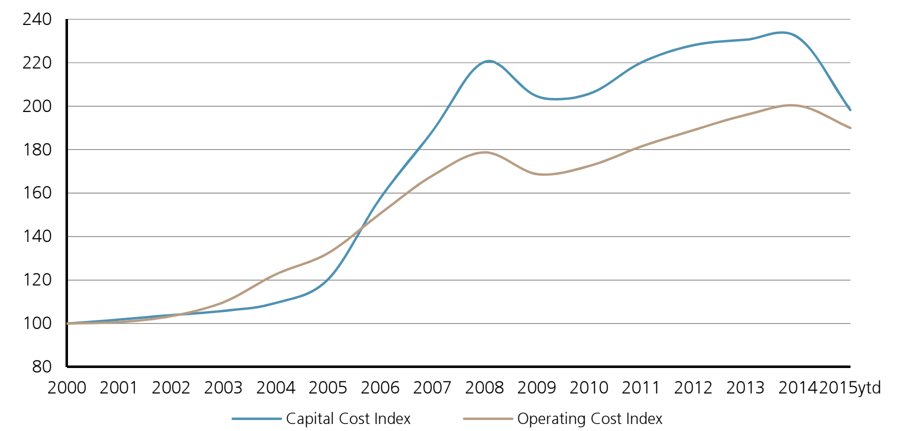
Measures of upstream cost inflation show the upstream capital cost index having increased by 112% and upstream operating cost index having increased by 63% over the same period. Recent data shows 1Q 2015 costs beginning to drop, with the sequential index down 13% and 6%, respectively.

Figure 13: Global Oilco – simulated economic and accounting performance



Source: UBS

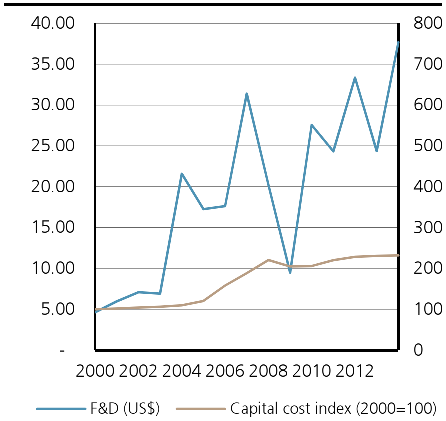
Figure 14: Upstream cost inflation



Source: UBS, CERA IHS

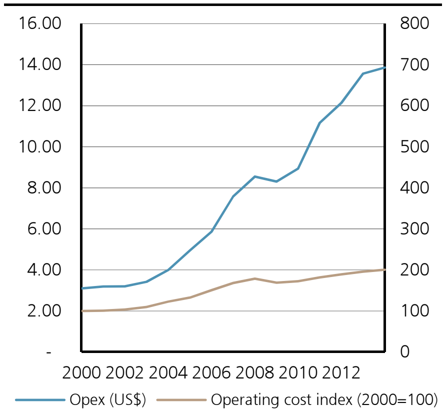
As we demonstrate below we believe that there is considerable scope for the industry to generate self-help gains. Unit opex and unit capex increases have significantly exceeded the rise in input costs. Three-year average F&D (to remove some of the lumpiness) has risen by 167% and opex has risen by 247%. There are some mitigating reasons for this. Higher oil prices see some relaxation in cost discipline. It also makes sense to do higher cost short-term projects or throw additional cost at projects to get them completed to capture the effect of higher prices. In terms of opex, some of the inputs are directly correlated, such as energy costs and transport costs and logistics. The prize, however is significant. Measuring recent unit cost increases versus that warranted by the direct input inflation yields a potential self-help benefit of $3.50/boe opex (25% of current levels) and $7.00/boe for capex (22% of current levels).

Figure 15: Integrated F&D costs vs capital cost inflation index



Source: UBS Global Oilco, CERA IHS

Figure 16: Integrated opex vs opex cost inflation index



Source: UBS Global Oilco, CERA IHS

Global sector view and stock picks

Below we discuss the sub-sectors by region and highlight our favourite stocks.

Global Majors

Chevron and ExxonMobil look as expensive as the large-cap E&Ps and yet do not offer the same traditional defensive attributes as in past downturns. We estimate the US Majors are discounting a recovery in longer-term oil prices to $71/Bbl (WTI), above the $67/Bbl implied in US E&P equity valuations. Moreover, with the advent of US shale oil pushing down oil prices and making higher cost oil sands, Arctic, and deepwater projects economically challenged, the Majors risk finding themselves too high on the cost curve, less nimble in being able to drive down costs, and materially outspending cash flow to fund capex and dividends as they re-calibrate their business models for a more challenging oil price environment. With Majors relatively expensive, asset bases that are less equipped to rapidly adjust to a lower price environment, and material FCF deficits that require a return to ~$70/Bbl to reach FCF neutrality, Chevron and ExxonMobil aren't the safe havens they've been in past downturns. Moreover, with our view that we are near the low in oil prices and expectations of a slow, grinding recovery, we rate Chevron and ExxonMobil as Neutral as we see better opportunities in well capitalised, low-cost US E&Ps as well as select international Majors.

The European majors are cheaper than their US counterparts. In part this is because they have created even more of a hostage to fortune in terms of their dividend commitments. In the context of their financial business models we believe they too require ~$70/bbl to balance cash in out by 2017. We believe that the proposed combination of **Royal Dutch Shell/BG** goes a long way to addressing the issues of cost reduction and portfolio positioning common to most of the majors and that Shell has done it without compromising its balance sheet and liquidity and position. Also in Europe we highlight **Statoil,** which, while very leveraged to the oil price and hence not a favoured name presently, has the opportunity to make very significant progress in terms of the type of structural changes (standardisation, repetition, supply chain management) that come with its dominant position on the Norwegian Continental Shelf. Previous concerns around future project quality and the government's objectives don't appear to be as

relevant in the current environment (and especially with the world-class Johan Sverdrup development to act as a domestic cornerstone).

Canadian Oils

We are cautiously positive on the Canadian large-cap oil and gas space, noting strong balance sheets, manageable payout ratios, and an opportunity to permanently improve cost structures through the bottom of the cycle, particularly in the oil sands. We estimate the group is pricing in long-term WTI and NYMEX natural gas prices of US$60/bbl and US$3.60/mcf, in-line with long-term strip pricing and suggesting equity valuations are attractive assuming trough commodity prices. We do, however, recognize above-average risk, with spot prices well below the long-term strip and the potential for normalization to take some time, as well as lingering uncertainty from Alberta's new provincial government. Based on this belief we recommend investors focus on strong balance sheets, low-cost structures, and minimal funding gaps, leading to a preference for the integrated producers. **Husky** and **Suncor** are our focus integrateds, boasting modest balance sheets, low sustaining capital requirements, and declining cost structures. For those with a higher risk tolerance we recommend ECA, which we believe remains significantly undervalued. Additionally, we have buy ratings on CNQ and CVE. We have neutral ratings on CPG, COS, ERF, and MEG and a Sell rating on IMO based on valuation.

US E&Ps

We estimate US E&P stocks are discounting a recovery in oil prices to ~$67/Bbl (WTI), ~16% above the long-dated (2019) futures curve of ~$58/Bbl, and rich to the typical pattern of pricing at parity to the long end of the curve when oil prices are troughing. Nonetheless, we view the longer-term futures curve as overly pessimistic as we see prices eventually recovering to a mid-cycle price of $75/Bbl WTI over the long-run – at this level, current valuations begin to look more compelling, although we are admittedly frustrated that investors currently need to pay a premium to the futures curve in order to play for that upside. We'd also note the gassy E&Ps are discounting a natural gas price of ~$3.50/MMBtu, also well above the long-dated futures curve of $3.26/MMBtu.

While we remain cautious on the E&P sector given full valuations and a still well oversupplied oil market, we'd highlight several selective E&Ps which compare favourably to peers on operational, financial, and valuation metrics we believe are most important. These metrics include above average cash flow per debt-adjusted share growth outlooks (2015-19E) and unbooked-to-proved reserve ratios, below average financial leverage (debt/EBITDX), and strong hedge positions in 2015-16 coupled with attractive relative valuation. While cash flow per debt-adjusted share growth has the highest correlation (~70%) to intra-sector relative performance, the unbooked-to-proved reserve ratio is one proxy for the size of a company's inventory and sustainability of its growth profile, particularly as we enter a period of more normalized commodity prices. Meanwhile, E&Ps with low financial leverage (as measured by debt/EBITDX which E&P managements have historically targeted to keep below ~2.0x) and strong hedge positions in 2015-16 are better able to withstand the challenging commodity price environment, are less susceptible to having material capex cuts that adversely impact production, and can be more flexible around opportunities that present themselves. Among the E&Ps in our coverage universe that screen well on these metrics as well as have attractive relative valuation include **Pioneer Natural Resources** (Buy) and **Newfield Exploration** (Buy). Meanwhile, Chesapeake Energy (Sell) and Murphy Oil (Neutral) screen poorly on both the key metrics and relative valuation. We'd also highlight Anadarko Petroleum (Buy) and Hess Corp (Buy) given their attractive relative valuation, strong balance sheets, and above-average growth outlooks in a normalised price environment.

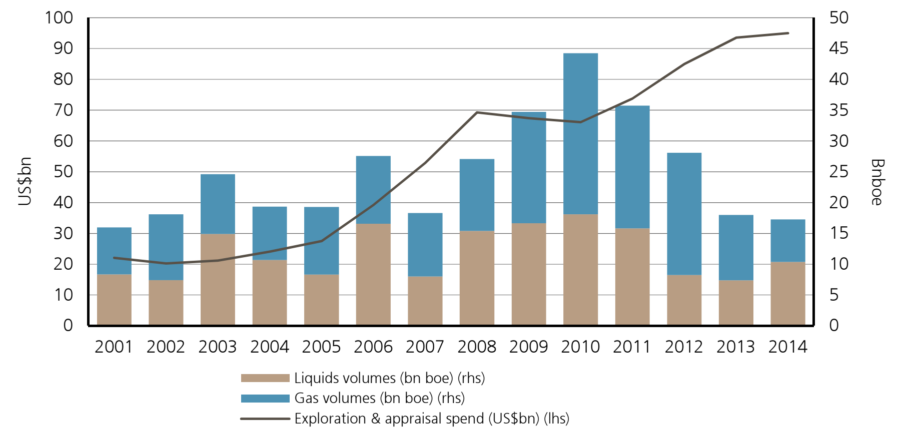
International E&Ps

Spending on conventional exploration and appraisal reached a record $95bn in 2014, after a decade of strong growth. High oil prices, and the expectation OPEC would sustain this, gave the industry confidence to invest 'at the margin' in projects requiring >$100/bbl to generate a rate of return. This saw increased appetite for unproven frontiers, often in challenging cost and operational environments (deep-water turbidites; West African pre-salt; Arctic, etc.). Wells costing $150-200m became commonplace even amid tightening fiscal terms.

But the cycle overheated. Discovered volumes declined year-on-year after 2010, resulting in a steep five-year trend of rising discovery costs, culminating at record high levels of $5.51/boe in 2014, with little shareholder value being created. The oil price crash should only hasten the waning in the appetite for exploration. In a low oil price environment exploration is treated as discretionary expenditure and spending cuts of 30-50% are

commonplace. As an extreme example, Europe's leading E&P Tullow Oil cut exploration to $200m in FY15E, down from >$1bn in recent years.

Figure 17: Global E&A spend ($bn) and discovered volumes (2C; $/boe)

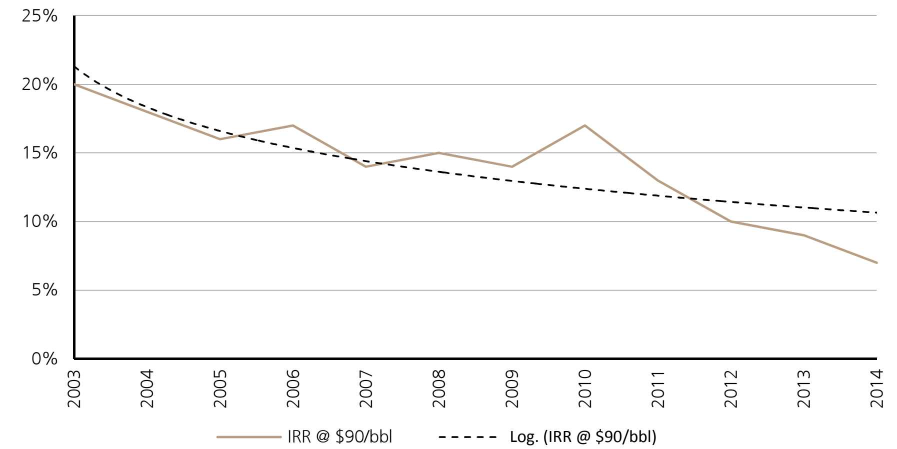


Source: UBS estimates; WoodMackenzie

Lower activity is seeing significant spare capacity emerge in the supply chain with the costs of seismic (-50%) and deep-water rig rates (-35%) down significantly from pre-crash peaks. As drilling programmes are checked we expect a number of companies will look to focus on lower cost acreage acquisition, seismic and geoscience work. A potential benefit of this more measured approach will be better quality prospect portfolios and exploration programmes when oil prices recover.

Exploration is likely to gravitate towards onshore, shallow water, emerging and mature basin opportunities, plus appraisal of promising recent finds. High cost frontiers, such as Arctic, deep-water, long-term gas, and unproven unconventional plays will be out of favour. The short-cycle nature of the drilling industry (rigs; seismic) means value for money is improving rapidly but few European E&P's have the wherewithal or suitable drill-ready acreage to move counter-cyclically. We see Cairn Energy with its emerging Senegalese oil-play as best positioned to grow its NAV through the drill-bit this year. Lundin is also one of the few with an active campaign, looking to add more resource in the Loppa High of the Barents after the Alta and Gotha play-openers.

Figure 18: Full cycle exploration returns



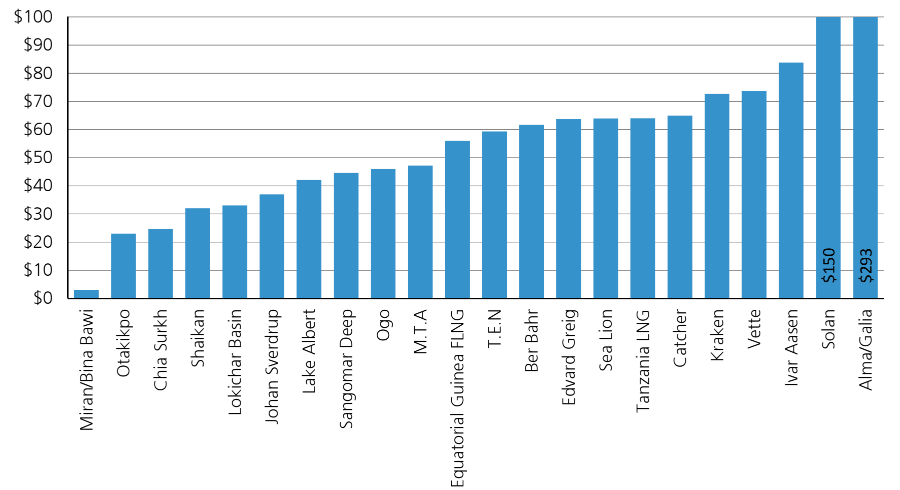
Source: UBS estimates; WoodMackenzie

Well capitalised explorers looking to add acreage positions are in the box seat. There will be myriad farm-in opportunities as companies search for exploration partners. Smaller companies may be unable to secure funding to progress through to seismic and drilling. Licensing rounds will have to offer more attractive fiscal terms to attract scarcer pools of capital, with the economics of frontier drilling having been badly degraded by cost inflation over recent years.

An important question remains which projects will attract sponsorship? Capital constraint has seen almost no project sanction in the year to date. In this context, projects attracting sponsorship will need low capital intensity and bulletproof positions on the cost-curve. This speaks, we think, to continued deferral of anything but top-tier deep-water projects and long-life, higher-cost unconventionals and a pivot towards shallow-water and onshore opportunities. Within the European E&P sector a handful of projects stand-out as relative winners, potentially mispriced by a shorter-term equity market. Most obvious, we believe, is Tullow and Africa Oil's onshore Lokichar Basin in

Kenya (10% IRR: $33/bbl), with neighbouring Lake Albert in Uganda ($42/bbl) also well positioned. Genel's growth assets in Kurdistan and Lekoil's in Nigeria (Otakikpo: $23/bbl; Ogo: $46/bbl) offer compelling economics but come with above-ground risk. Senegal is a remote, deep-water (>1,100m) environment, but pragmatic fiscal terms mean Cairn's Sangomar Deep ($47/bbl) should progress – a lesson to other host governments. Lundin and Det Norske's Johan Sverdrup is a unique asset (2.3Bnbbl; $37/bbl) in a benign OECD environment (Norway). Premier's Sea Lion ($64/bbl) and Vette ($74/bbl) face cost challenges.

Figure 19: European E&P's – $/bbl (Brent, LT) for 10% IRR of under-development and unsanctioned developments



Source: UBS estimates; WoodMackenzie

Within the Asian/Australian E&P sector the focus will be on progressing LNG with the lowest supply cost, capable of competing with incremental supply out of the US, East Africa and Canada. We expect the XOM-led PNG LNG project to commit to a third 3.5 mtpa LNG train in 2017 given the mix of liquids rich, high heating value LNG product, attractive PNG fiscal terms and piggy back economics. The Total-led Papua LNG project is pursuing FID in 2017 on a 1-2 train 5-7 mtpa development; we expect this will slip to 2018 given the remaining challenges ahead in developing this project. Woodside is pursuing the development of Browse FLNG; but we expect this project will be delayed beyond the current planned FID in 2H16.

M&A may become a factor. An illiquid asset market has been one factor that has caused the international E&P sector to fall out of favour in the eyes of equity investors. The U.S onshore has emerged as a much more liquid, attractive asset market. A falling oil price could well be a prompt for sector consolidation as industry participants seek to benefit from synergies and cost savings and better-funded players step-in to enable projects to progress. Financially stretched independent producers will come under pressure and are vulnerable to opportunistic approaches. In a world of abundant supply and low prices we see M&A as a process of portfolio high-grading, towards lower cost opportunities. M&A so far this year (Shell-BG; Noble-Rosetta; ENOC-Dragon) confirms an industry repositioning along such lines.

GEM oils

We discuss below a summary of emerging market oil by sub region:

Russia: Experiencing stormy seas

The Russian energy sector has been experiencing stormy seas. Sectoral and financial sanctions coupled with weak oil prices have motivated companies to reconsider production and marketing strategies. We note that 1H Russian oil production was up 1.2% y-o-y to 10.7 m bpd despite a relatively severe 22% cut in USD capex (upstream capex soared 20% y-o-y in RUB). It is worthy of note that while development drilling added 10% y-o-y, more productive horizontal drilling moved up 27% y-o-y and the share of horizontal drilling reached 33% overall.

Acknowledging that production growth is unsustainable in light of capex cuts, we believe capex flexibility and lower upstream costs are still the key competitive advantages of the Russian oil companies. We also note Russia is diversifying oil and gas flows towards Asia. Without growth in oil output, an increase in Russian oil exports towards Asian markets may only come at the expense of exports to Europe. We also think Gazprom's strategy towards the EU has been changing after the cancellation of South

Stream. Gazprom's CEO said for example that the company will reconsider its marketing strategy in the EU and is no longer prioritising direct access to final customers in the EU.

The Russian government is considering a new profit-based taxation (PBT) regime for upstream oil as the existing revenue-based tax regime does not incentivise investments in new projects. The PBT regime should stimulate capex, ultimately improving the recovery of reserves and maintaining the production profile for longer. Meanwhile, producers have started to experience a negative impact for the downstream segment from the tax manoeuvre (in place since the beginning of 2015) amid low oil prices, we believe.

While Rosstat does not publish the value of oil and gas in GDP precisely, the consensus estimate is that oil and gas makes up for about a quarter of Russian GDP. The oil price is the key driver for the rouble exchange rate against the US dollar. The two variables demonstrate a nearly 'one-for-one' relationship. In autumn last year the Russian Central Bank adopted a flexible exchange rate policy. Since that time the rouble automatically adjusts to oil price movements. This helps the Russian government to balance federal budget revenues and costs in RUB terms. According to the government, the federal budget is balanced at a Urals oil price of R3,200/bbl (currently $46/bbl).

A weaker RUB is good for oil exporters as the majority of upstream opex and capex is denominated in RUB. However, it is negative for domestic downstream as oil product prices are based in RUB. We have also observed that export netback parities broke down for diesel and gasoline in 1Q15. We think weak domestic petroleum pricing is a new reality driven by demand constraints (weak economy, higher fuel efficiency) and supply improvements on refining upgrades. Integrated oil companies with higher exposure to domestic downstream (Bashneft, Gazprom Neft and Lukoil) generate weaker returns.

Russian gas companies are largely removed from the turmoil in domestic downstream markets. However, gas company revenues in USD are negatively impacted by a weaker RUB because of the higher share of domestic RUB denominated sales revenues (~40% for Gazprom and ~60% for Novatek). Overall, a weaker RUB mostly offsets the negative impact from weaker oil prices in the upstream. However, the domestic downstream business remains under pressure due to the tax manoeuvre and weaker RUB. We estimate that the domestic gross refining margin for simple refineries (the refineries with light product yield 45% and below) is negative. On our numbers, domestic refining margins turn negative at RUB/US$58 and higher while the average gross refining margin at current oil price is below $3/bbl. Overall, a weaker RUB effectively protects Russian upstream business from price shocks. We highlight that weaker RUB helps companies to withstand lower oil prices in the short term as accelerating ruble inflation is likely to burn cost (opex and capex) savings over next two years. Therefore, a weaker rouble is a pain killer not a remedy, in our view.

Russian downstream is hurting. As expected, oil tax changes have had a profound negative impact on downstream profitability potentially enforcing the closure of around 400 kbpd of lower complexity refining capacity and incentivising medium refineries to complete upgrades. However, at an oil price of $55/bbl and below, investments in mandatory refining upgrades are unprofitable, by our estimates. Among major Russian oil companies, Rosneft faces the highest refining capex requirements owing to its relatively low refining complexity. Rosneft asked that the government reconsider its tax changes and delay mandatory switching to Euro-5 automotive fuels standard. We think the government may consider this together with PBT at its autumn meeting, although Deputy PM Dvorkovich said that the tax change is unlikely to be revised. We do not forecast tax changes for the Russian oil and gas sectors at this stage.

There is a glut of gas in Russia due to weak demand both in Russia and in Europe and strong production growth by independent gas producers. We believe the Russian government may freeze domestic gas tariffs again (as it did in 2014) in an attempt to stimulate the economy. This is likely to have long-term negative repercussions for Novatek, Gazprom and Rosneft.

The structure of the Russia equity market is such that the oil and gas sector is by far the most dominant. It accounts for 53% and 58% of RTS and MSCI Russia indices respectively. We note that, since the beginning of 2014, the RTS Index has fallen 43%, the RUB has weakened by 50% relative to USD as the oil price dropped 55%, but Russian oil and gas companies have lost 36% of their value, thereby outperforming the rest of the market.

We think that the defensiveness of the Russian oil and gas sector is due to the tax regime (upstream tax burden is high and revenues after tax take are low, hence, the oil price decline's effect on net revenues is less profound) as well as RUB denominated

costs. That said, total market capitalisation of the Russian energy sector is $198bn. Due to low share liquidity and market capitalisation, some Russian oil stocks have become peripheral to the market and we note that four Russian majors Rosneft, Lukoil, Gazprom and Novatek account for 75% and 90% of the sector's market capitalisation and ADV year-to-date, respectively

Emerging Asia: Deregulation has run its course

A shared theme in the last few years in China, India and Thailand has been an overall move toward more market-based pricing in the oil & gas sector. This has manifested itself, for example, in rising natural gas prices across all the countries, and the gradual lifting of onerous refined product pricing regimes in China and India. In the last few years, SOEs in these countries also undertook major drives to expand their reserves bases through at times very expensive M&A.

While some moderate pricing de-regulation potential exists, for example an eventual final move to outright free market pricing for gasoline and diesel in China, we believe the majority of price de-regulation is now behind us. We also anticipate the M&A front to remain very subdued. This is due to a combination of a weak and uncertain oil price outlook, and companies that have become more focused on developing existing projects.

So what will be the shared current and future themes in GEM Asia in the coming years?

Similar to the case of all global upstream and integrated oil companies, Asia's companies will need to be acutely focused on costs. We believe the domestic assets of Asia's pure upstream E&P players like CNOOC, PTTEP and Cairn are competitive, although this is diluted by higher-cost assets acquired overseas in recent years. Meanwhile, the upstream businesses of China's integrated companies PetroChina and Sinopec, and India's ONGC (particularly its overseas operations) should be the worst hit in the region from low oil prices despite efforts to cut capex. The risk will be diversified somewhat, particularly for Sinopec, by integration into downstream business, and for ONGC through lower subsidy compensation and better net oil realizations for their domestic upstream operations.

Currencies across the region have also started to devalue and this has in part been hastened by the devaluation of the Chinese yuan. In recent years, Asia's upstream and integrated companies have been taking on relatively more US$ debt to finance operations. The move toward US$ debt has been derived out of a desire to: 1) take advantage of cheaper US$ rates versus local currency; and 2) hedge risk against increasingly more global E&P operations following large M&A activity. On balance, while debt service costs will inevitably increase, US$-based revenue will also translate into higher revenues in local currency terms. Meanwhile, costs which are mostly in local currency may benefit. CNOOC is the most exposed, with nearly all long-term debt in US dollars. PTTEP's accounting treatment may be an exception to the region and may benefit less from a stronger US dollar.

We believe that India could emerge as one of the key beneficiaries amid the weak oil price outlook, and this is currently being ignored against the backdrop of global demand slowdown concerns. With nearly 85% of India's crude oil requirements imported and diesel prices de-regulated, we expect India's fuel under-recoveries to decline by 50% in FY16E and petroleum product demand to surprise. This should indirectly lower India's fiscal deficit and help its oil state-owned enterprises (SOEs) to report better earnings. Sharp depreciation of the rupee could, however, offset part of the benefits of low oil prices, particularly for oil marketing SOEs whose earnings are more vulnerable.

Brazil: Better focus on returns but outlook uncertain

Despite improved company fundamentals that include a new Board, a new management team, a new strategic plan with increased focus on returns, focus on production of more value-accretive barrels, overall better investment discipline, and sale of non-core assets, we remain cautious on Petrobras. UBS is also cautious on Brazilian equities.

This is due to the uncertain macroeconomic outlook for Brazil and recent weakness in the BRL. Moreover, UBS sees additional risks to the BRL (note the risk of a potential sovereign credit rating downgrade to below investment-grade status), vis-à-vis (i) high company leverage, and mostly in foreign currency (>75% of the EV is debt); (ii) unclear ability of Petrobras to increase domestic prices as they are already today a bit above import parity at a time when inflation is running at c.9% p.a.

In terms of FX exposure, to offset the negative impact on EBITDA, each R$10c devaluation in the BRL would require the following: (a) 2pp hike in refinery gate prices for diesel/gasoline; (b) 2pp higher production (from 4% for 2015e yoy); (c) c.US$5/bbl

lower-than-anticipated Brent as Petrobras is a net importer. On the debt side, the R$10c BRL devaluation would require Petrobras to sell another c.R$8bn in assets.

Government-related risks have come down as a result of the Car Wash corruption scandal, underscored by a Board composition that is more market friendly, recent premium prices to import parity, an aggressive asset sale plan, and the fact that a Petrobras capital restructuring failure would mean potential contagion to the sovereign credit rating.

Petrobras has become more of a government proxy. As noted in S&Ps and Fitch ratings analysis: Petrobras bonds are not considered non-investment-grade status due to their belief that the Federal Government of Brazil will ultimately guarantee the company's debt payments (be it via asset sale or equity injections). However, since last year, the BRL has weakened considerably and Moodys actually downgraded Petrobras bonds to two notches below investment grade.

For Petrobras, execution risks have risen amid the Car Wash corruption scandal, but the company has already guided for reduced production going forward. We estimate dividends for ON shares will be zero for this year and next. The dividend yield for the PN shares is about 10% but contingent limited Car Wash-related liabilities (we carry R$13bn in our model from potential class action suits, SEC penalties, and further impairments), no more tax dispute settlements, and no major BRL devaluation.

Petrobras' refining and marketing businesses look more profitable and stable going forward. We estimate the E&P assets are still profitable under US$60/bbl Brent. The stock is trading at a discount to NAV even when adjusting it for a scenario that assumes the futures strip with an equity offering to lever down the balance sheet, and additional Transfer of Rights and tax liabilities.

Top GEM oils pick: Sinopec (Buy) (a UBS Key Call)

Our top pick among GEM oil stocks is **Sinopec (Buy) (Key Call).** We believe Sinopec's business has undergone a transformation in recent years. Unlike at the time of global financial crisis valuation lows, when the stock was trading on similar valuations to today's levels, today refined product price reform has long since become a reality, the outlook for petrochemicals is strong, non-fuel sales has emerged as an exciting growth opportunity, Sinopec has emerged with very large natural gas reserves potential, the balance sheet is stronger, dividend payout ratio higher, and corporate governance and transparency significantly better. While Sinopec is not immune to the effects of lower oil prices, we believe that the company's exposure is less than most of its upstream and integrated peers in Asia with E&P estimated at 30-35% of company value.

2014 picks

In 2014 we highlighted the following: In large cap E&P Anadarko Petroeleum, Marathon Oil, EOG Resources and Pioneer Natural Resources. In the EM sector we expressed a preference for Sinopec and Reliance Industries plus Lukoil within a challenged Russian context. We had little conviction in developed market Majors but highlighted BG Group as our best idea. We don't have the luxury of changing these picks over the 12 months period between Analysers and the collapse in oil prices has meant all have generated negative returns although a number have proved more resilient than the average.

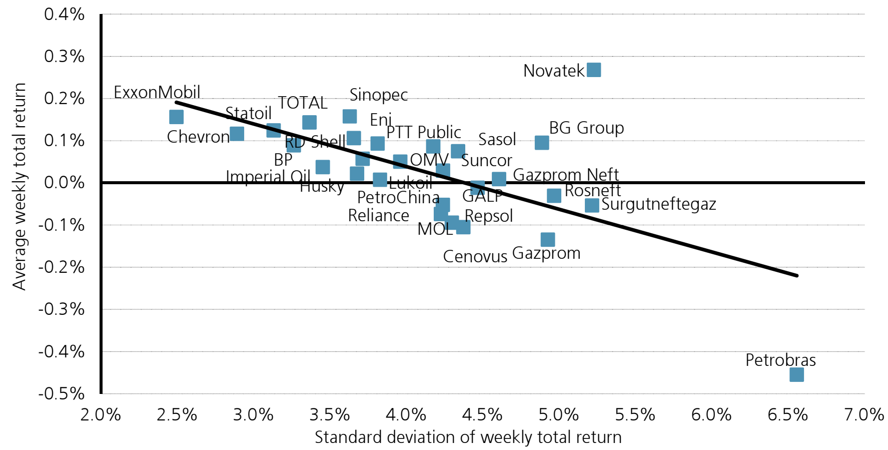
Figure 20: 2014 Analyser top picks

	Mkt Cap ($bn)	Rating	Price Target	Current Price	Absolute performance ($) 12m	Absolute performance ($) YTD	Relative performance ($) 12m	Relative performance ($) YTD
Anadarko	34.7	Buy	$ 82.0	$ 68.3	-38.7%	-17.2%	-1.5%	5.1%
BG Group	49.9	Buy	1,300p	958p	-28.3%	7.9%	8.9%	30.1%
EOG Resources	42.2	Neutral	$ 80.0	$ 76.9	-28.6%	-16.5%	8.5%	5.8%
Marathon	11.1	Buy	$ 21.0	$ 16.4	-60.4%	-42.2%	-23.2%	-19.9%
Pioneer	17.7	Buy	$ 156.0	$ 118.4	-42.5%	-20.5%	-5.4%	1.8%
Sinopec	89.5	Buy	HK$ 8.0	HK$ 4.8	-40.9%	-23.0%	-3.8%	-0.7%
Lukoil	27.4	Neutral	$ 37.0	$ 36.3	-37.2%	-8.8%	0.0%	13.5%
Reliance	36.9	Buy	INR 1,090	INR 836	-26.5%	-10.6%	10.7%	11.7%
Average					**-35.7%**	**-14.3%**	**1.5%**	**8.0%**
MSCI Oil & Gas					**-37.1%**	**-22.3%**		

Source: Datastream, UBS. Note: Date of inclusion 3 September 2014. The indicated performance returns are based on capital appreciation, excluding dividends and transaction costs such as commissions, fees, margin interest and interest charges. Actual transactions adjusted for such transaction costs will result in reduced total returns. Prices of stocks in this performance reflect closing prices. Past performance is not an indication of future results. Average is market cap weighted,

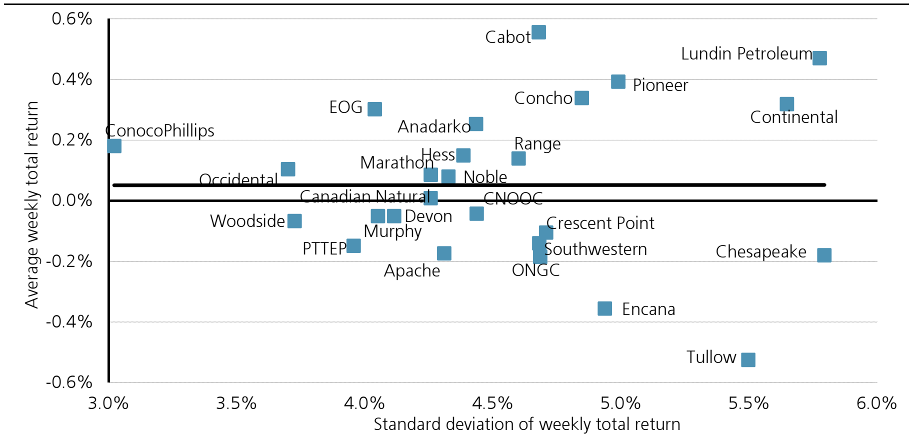
Growth, valuation and forecast upside

Figure 21: Risk and reward (5 year, weekly) – Integrateds



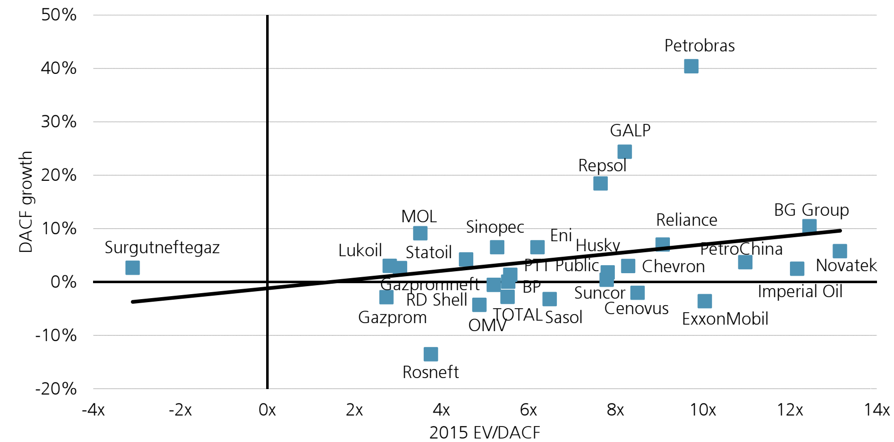
Source: UBS

Figure 22: Risk and reward (5 year, weekly) – E&Ps



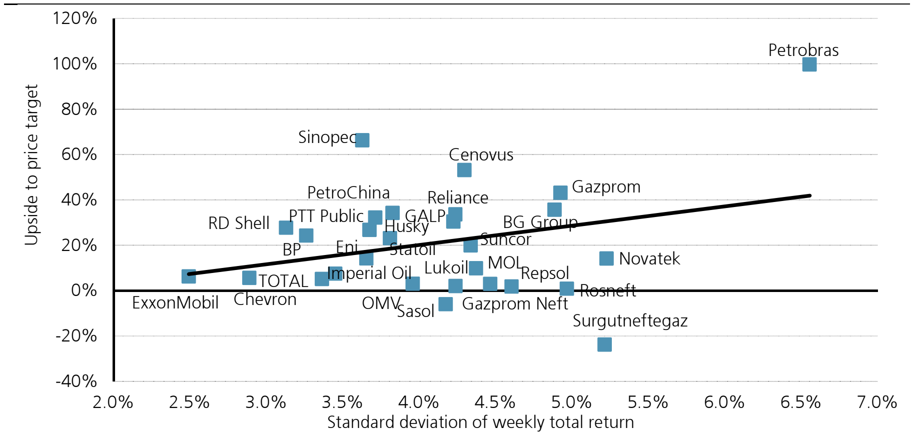
Source: UBS

Figure 23: 2015E EV/DACF vs 5-year DACF growth (2014-19E)



Source: UBS

Figure 24: Target upside and 5-year historical risk profile



Source: UBS

Figure 25: Net Asset Values of Global Integrateds and Producers

	Share price	NAV	Discount to NAV	Upstream EV (US$M)	1P reserves Mboe	Upstream value per boe ($/boe)	Downstream EV (US$M)	Other EV (US$M)	Total EV (US$M)	Balance sheet items (US$M)	Equity Value (US$M)
Anadarko Petroleum	$68	$99	-31%	n/a	2,858	n/a	n/a	n/a	n/a	n/a	n/a
Apache	$43	$60	-29%	n/a	2,396	n/a	n/a	n/a	n/a	n/a	n/a
BG Group	958p	1,065p	-10%	55,532	3,613	$15.37	0	10,709	66,241	(8,566)	57,675
BP	338p	463p	-27%	132,901	17,523	$7.58	62,814	-13,003	182,712	(48,565)	134,147
Cabot Oil & Gas	$22.8	$38.9	-41%	n/a	1,233	n/a	n/a	n/a	n/a	n/a	n/a
Canadian Natural Resources	$27.4	C$35.0	-22%	50,232	5,511	$9.11	n/a	n/a	50,232	(16,623)	33,609
Cenovus	$13.7	C$20.0	-31%	15,690	2,379	$6.60	3,509	0	19,199	(4,430)	14,769
Chesapeake	$7.3	$15.3	-52%	n/a	2,469	n/a	n/a	n/a	n/a	n/a	n/a
Chevron	$77	$105	-27%	175,412	11,102	$15.80	35,059	0	210,471	(12,486)	197,986
CNOOC	HK$8.8	HK$13.0	-32%	127,817	4,450	$28.72	0	0	127,817	(20,157)	107,660
Concho Resources	$104	$111	-6%	n/a	637	n/a	n/a	n/a	n/a	n/a	n/a
ConocoPhillips	$47.2	n/a	n/a	n/a	8,906	n/a	n/a	n/a	n/a	n/a	n/a
Continental	$31	C$37.3	-18%	n/a	1,351	n/a	n/a	n/a	n/a	n/a	n/a
Crescent Point	$16.6	$15	11%	10,853	528	$20.55	n/a	n/a	10,853	(4,058)	6,796
Devon Energy	$40.1	$59	-31%	n/a	2,754	n/a	n/a	n/a	n/a	n/a	n/a
Encana	$6.8	$5	37%	9,655	5,511	$1.75	n/a	n/a	9,655	(5,861)	3,795
Eni	€ 14.5	€ 19.5	-26%	86,264	6,602	$13.07	4,872	8,339	99,475	(19,221)	80,254
EOG Resources	$77	$65	18%	n/a	2,497	n/a	n/a	n/a	n/a	n/a	n/a
ExxonMobil	$72	$56	30%	163,432	25,269	$6.47	55,605	45,072	264,109	(29,497)	234,612
GALP	€ 9.0	€ 16.1	-44%	12,675	232	$54.55	3,503	3,775	19,953	(4,689)	15,264
Gazprom	$4.2	$10.6	-60%	147,890	121,802	$1.21	7,091	5,285	160,266	(34,733)	125,533
Hess	$56	$85	-34%	n/a	1,431	n/a	n/a	n/a	n/a	n/a	n/a
Husky	$22.1	C$17.0	30%	13,170	1,265	$10.41	6,596	0	19,766	(5,049)	14,717
Imperial Oil	$43.7	C$35.0	25%	23,473	3,959	$5.93	11,344	2,365	37,182	(8,037)	29,145
Lukoil	$36.3	$74	-51%	47,249	17,406	$2.71	17,836	887	65,972	(10,467)	55,505
Lundin Petroleum	SEK 107	SEK 112	-4%	7,455	187	$39.77	n/a	n/a	7,455	(3,223)	4,232
Marathon Oil	$16.4	$36.7	-55%	n/a	2,198	n/a	n/a	n/a	n/a	n/a	n/a
MOL	HUF 13,650	HUF 22,192	-38%	4,825	370	$13.05	6,109	904	11,838	(3,834)	8,003
Murphy Oil	$28.6	$32.7	-13%	n/a	757	n/a	n/a	n/a	n/a	n/a	n/a
Noble Energy	$30.7	$46	-33%	n/a	1,404	n/a	n/a	n/a	n/a	n/a	n/a
Novatek	$92	$97	-5%	32,963	12,322	$2.68	0	0	32,963	(3,716)	29,247
Occidental Petroleum	$70	$75	-7%	n/a	2,820	n/a	n/a	n/a	n/a	n/a	n/a
OMV	€ 22.3	€ 24.6	-9%	9,830	1,090	$9.01	6,227	2,722	18,778	(9,586)	9,192
ONGC	INR 226	INR 356	-37%	n/a	6,367	n/a	n/a	n/a	n/a	n/a	n/a
Petrobras	R$ 8.5	R$ 25.0	-66%	191,000	13,140	$14.54	3,300	24,000	215,000	(121,000)	94,000
PetroChina	HK$5.8	HK$9.8	-41%	229,712	22,851	$10.05	136,593	0	366,305	(105,194)	261,111
Pioneer Natural	$118	$195	-39%	n/a	799	n/a	n/a	n/a	n/a	n/a	n/a
PTT E&P	฿74	฿116	-37%	13,446	777	$17.31	0	0	13,446	61	13,507
PTT Public	฿260	฿320	-19%	8,781	507	$17.31	35,178	0	43,958	(16,674)	27,284
Range Resources Corp.	$36.5	$47.0	-22%	n/a	1,718	n/a	n/a	n/a	n/a	n/a	n/a
Reliance Industries	INR 836	INR 1,091	-23%	5,812	526	$11.06	43,298	16,505	65,615	(16,203)	49,412
Repsol	€ 11.8	€ 16.8	-30%	23,752	1,539	$15.43	15,453	3,203	42,408	(15,546)	26,862
Rosneft	$3.7	$6.8	-46%	118,159	33,997	$3.48	11,148	0	129,307	(56,750)	72,556
Royal Dutch Shell	1,605p	2,478p	-35%	193,042	13,081	$14.76	89,712	12,372	295,127	(44,750)	250,377
Sasol	ZAR 430	ZAR 400	7%	4,577	252	$18.16	10,428	2,641	17,646	(1,081)	16,565
Sinopec	HK$4.8	HK$10.0	-52%	53,385	3,930	$13.58	151,128	0	204,513	(65,149)	139,364
Southwestern Energy	$15.4	$23.3	-34%	n/a	1,791	n/a	n/a	n/a	n/a	n/a	n/a
Statoil	NOK 121	NOK 165	-27%	73,279	5,359	$13.67	8,623	1,163	83,065	(14,870)	68,195
Suncor Energy	$35.0	C$33.0	6%	41,782	4,679	$8.93	11,837	0	53,619	(10,153)	43,466
TOTAL	€ 39.96	€ 49.59	-19%	115,058	11,521	$9.99	55,935	-2,786	168,208	(38,513)	129,695
Tullow Oil	200p	277p	-28%	9,366	345	$27.12	n/a	n/a	9,366	(5,309)	4,057
Woodside Petroleum	AU$ 30.6	AU$ 32.4	-5%	22,522	1,048	$21.48	0	0	22,522	(3,834)	18,687

Source: UBS estimates, WoodMackenzie, Company Data. Note: $/boe is on a 1P basis except for Tullow (2P basis)

Global integrated oil and producers valuation

			EV/DACF					P/CEPS					P/E					Dividend Yield					FCF Yield				
Company	Country	Price	2015E	2016E	2017E	2018E	2019E	2015E	2016E	2017E	2018E	2019E	2015E	2016E	2017E	2018E	2019E	2015E	2016E	2017E	2018E	2019E	2015E	2016E	2017E	2018E	2019E
BG Group	UK ($)	957.80	12.5x	9.5x	6.6x	5.8x	5.0x	11.2x	8.7x	6.2x	5.4x	4.9x	38.5x	25.6x	12.5x	10.2x	8.6x	2.0%	2.4%	2.7%	3.1%	3.6%	-4.5%	0.0%	4.6%	6.5%	7.9%
BP	UK ($)	337.90	5.5x	5.5x	4.8x	4.4x	4.0x	2.9x	4.7x	4.1x	3.7x	3.4x	14.1x	14.2x	10.2x	9.1x	8.4x	7.8%	7.9%	8.1%	8.2%	8.4%	1.0%	4.9%	8.8%	11.3%	12.8%
Cenovus	Canada (C$)	13.71	8.5x	9.8x	5.9x	5.2x	4.9x	8.8x	10.1x	5.7x	5.0x	4.7x	>100x	n/m	31.3x	21.4x	18.6x	4.7%	3.5%	3.5%	3.5%	3.5%	-3.7%	-0.6%	4.7%	4.9%	6.1%
Chevron Corp.	US ($)	76.67	8.3x	6.7x	5.4x	4.9x	4.4x	7.3x	5.7x	4.6x	4.3x	4.0x	29.6x	29.1x	15.5x	13.0x	11.2x	5.6%	5.7%	6.0%	6.3%	6.6%	-8.5%	0.6%	7.2%	8.3%	9.6%
Eni	Italy (€)	14.45	6.2x	5.0x	4.0x	3.5x	3.1x	3.8x	3.8x	3.2x	2.9x	2.7x	41.8x	28.2x	12.6x	10.2x	8.7x	5.6%	5.7%	6.0%	6.1%	6.3%	-3.1%	4.9%	9.9%	12.3%	14.4%
ExxonMobil	US ($)	72.46	10.1x	10.5x	8.9x	8.4x	8.1x	9.2x	9.6x	8.1x	7.7x	7.3x	19.2x	20.7x	15.7x	14.9x	14.4x	4.0%	4.2%	4.5%	4.9%	5.0%	1.0%	1.3%	3.7%	4.4%	4.8%
GALP	Portugal (€)	8.98	8.2x	7.8x	7.5x	7.1x	6.5x	4.8x	6.6x	5.3x	4.2x	3.4x	13.5x	17.2x	14.6x	11.3x	8.7x	4.7%	5.7%	5.7%	6.0%	7.1%	2.9%	-4.4%	-1.5%	2.6%	7.5%
Gazprom	Russia ($)	4.19	2.7x	2.8x	2.4x	2.0x	1.9x	1.7x	1.7x	1.4x	1.2x	1.2x	3.0x	2.1x	1.8x	1.6x	1.6x	6.0%	12.0%	14.3%	15.5%	15.4%	-1.1%	2.2%	7.9%	24.0%	25.5%
Gazprom Neft	Russia ($)	11.65	3.0x	4.0x	2.6x	2.1x	1.9x	1.7x	2.3x	1.5x	1.2x	1.3x	3.4x	2.5x	1.6x	1.4x	1.5x	7.4%	9.8%	15.4%	17.5%	16.5%	10.8%	-4.6%	22.2%	32.4%	34.4%
Husky Energy	Canada (C$)	22.08	7.8x	6.9x	5.8x	5.3x	5.3x	6.3x	5.5x	4.5x	4.3x	4.2x	n/m	65.0x	23.9x	24.4x	19.4x	5.4%	5.4%	5.4%	5.4%	5.4%	0.7%	4.3%	4.3%	4.3%	6.0%
Imperial Oil	Canada (C$)	43.72	12.2x	9.2x	6.7x	6.3x	5.4x	12.8x	9.6x	7.2x	7.0x	6.2x	19.4x	14.4x	9.2x	9.0x	7.7x	1.2%	1.4%	1.5%	1.7%	1.7%	-1.7%	2.3%	5.2%	4.1%	5.5%
Lukoil	Russia ($)	36.26	2.8x	3.4x	2.6x	2.2x	2.0x	2.1x	2.5x	1.9x	1.7x	1.6x	8.9x	6.1x	3.6x	3.5x	3.2x	7.1%	6.6%	7.4%	7.6%	8.3%	7.9%	5.2%	10.6%	14.5%	15.1%
MOL	Hungary (HUF)	13,650	3.5x	4.1x	3.9x	3.4x	3.3x	2.7x	2.7x	2.5x	2.1x	2.1x	6.1x	8.5x	7.1x	5.6x	5.4x	3.7%	3.8%	4.9%	5.6%	5.6%	3.1%	4.8%	2.6%	8.0%	11.9%
Novatek	Russia ($)	92.00	13.2x	9.2x	7.0x	6.2x	5.5x	11.1x	8.9x	7.3x	7.2x	7.2x	11.9x	9.1x	7.5x	5.7x	4.6x	2.5%	3.3%	4.0%	5.3%	6.5%	6.1%	9.6%	11.9%	12.2%	12.1%
OMV	Austria (€)	22.32	4.9x	5.6x	5.0x	4.9x	4.7x	2.2x	2.5x	2.1x	2.0x	1.9x	7.9x	11.5x	7.8x	6.9x	6.2x	5.7%	5.7%	5.7%	5.7%	5.7%	-2.8%	0.6%	4.1%	8.3%	6.6%
Petrobras (PN)	Brazil (BrR)	8.51	9.7x	8.5x	6.0x	5.5x	5.1x	2.4x	2.1x	1.4x	1.2x	1.1x	20.6x	9.9x	3.6x	2.7x	2.4x	12.6%	11.5%	11.5%	11.2%	12.4%	-41.1%	-27.8%	-8.0%	6.4%	14.8%
PetroChina	China (Rmb)	5.81	11.0x	10.1x	7.8x	7.1x	6.4x	3.9x	3.9x	3.3x	3.0x	2.7x	18.1x	19.0x	10.3x	8.0x	6.7x	2.5%	2.4%	4.4%	5.6%	6.7%	-6.7%	-2.2%	1.5%	3.5%	4.4%
PTT Public Company	Thailand (Bt)	260.00	5.6x	7.2x	7.9x	7.5x	7.2x	4.5x	4.4x	3.9x	3.9x	3.7x	10.1x	9.7x	8.6x	9.2x	9.4x	4.5%	4.9%	5.4%	5.8%	5.8%	-11.6%	0.7%	0.9%	8.7%	11.8%
Reliance Industries	India (INR)	835.60	9.1x	9.0x	7.4x	6.1x	5.1x	5.6x	6.7x	5.8x	5.2x	4.3x	12.0x	9.9x	9.1x	8.2x	6.4x	1.0%	1.3%	1.5%	1.8%	2.0%	-21.6%	-8.0%	8.5%	10.2%	15.9%
Repsol	Spain (€)	11.79	7.7x	6.1x	5.0x	4.6x	4.4x	3.5x	3.6x	3.0x	2.8x	2.7x	10.0x	12.9x	8.0x	7.1x	6.7x	8.6%	8.8%	9.1%	9.4%	9.7%	-57.9%	-4.2%	1.4%	3.6%	5.0%
Rosneft	Russia ($)	3.67	3.8x	4.0x	3.5x	3.1x	3.0x	1.5x	1.7x	1.7x	1.7x	1.9x	6.4x	5.4x	3.3x	3.1x	2.6x	3.9%	4.6%	7.5%	8.1%	9.5%	41.9%	26.7%	23.7%	23.6%	19.5%
Royal Dutch Shell	UK (p)	1,605.00	5.2x	5.3x	4.7x	4.5x	4.2x	5.2x	4.8x	4.2x	3.9x	3.6x	11.7x	11.5x	8.6x	7.8x	7.0x	7.7%	7.7%	7.7%	7.9%	8.0%	3.6%	3.7%	6.5%	8.4%	9.9%
Sasol	S.Africa (Rd)	42,964	6.5x	11.7x	9.2x	8.2x	5.8x	6.7x	9.9x	7.1x	6.2x	5.2x	12.0x	20.6x	11.4x	9.3x	7.3x	2.8%	1.8%	3.2%	4.0%	4.3%	0.9%	-14.1%	-4.2%	3.0%	9.0%
Sinopec	China (Rmb)	4.81	5.3x	4.6x	3.9x	3.5x	3.3x	3.8x	3.6x	3.0x	2.7x	2.6x	12.7x	11.0x	7.7x	6.5x	5.9x	3.8%	4.3%	6.2%	7.3%	8.1%	5.7%	5.3%	7.7%	10.7%	11.2%
Statoil	Norway (Nkr)	121.00	4.6x	4.3x	3.8x	3.7x	3.4x	3.5x	3.2x	2.7x	2.6x	2.4x	19.1x	15.7x	9.2x	8.2x	7.5x	6.2%	6.0%	6.1%	6.3%	6.4%	-4.2%	-2.1%	4.2%	6.5%	9.0%
Suncor Energy	Canada (C$)	35.00	7.8x	7.9x	6.7x	6.5x	5.3x	7.7x	7.0x	6.0x	5.9x	4.9x	36.8x	26.3x	20.0x	20.7x	14.7x	3.2%	3.3%	3.7%	4.2%	4.8%	-0.8%	2.4%	5.8%	7.9%	10.2%
Surgutneftegaz	Russia ($)	34.10	-3.1x	-2.6x	-2.3x	-2.1x	-2.4x	4.0x	3.0x	2.7x	2.6x	2.8x	2.6x	6.5x	5.4x	6.4x	4.2x	4.6%	2.0%	2.5%	2.0%	2.9%	6.8%	14.3%	12.4%	12.2%	9.9%
TOTAL	France ($)	39.96	5.5x	5.7x	5.0x	4.7x	4.5x	5.0x	5.3x	4.4x	4.0x	3.8x	11.5x	14.6x	10.4x	9.2x	8.5x	6.2%	6.2%	6.3%	6.4%	6.5%	-4.5%	-0.5%	4.6%	6.5%	6.8%
Global			**5.9x**	**5.8x**	**5.0x**	**4.6x**	**4.2x**	**4.5x**	**4.6x**	**3.8x**	**3.5x**	**3.3x**	**12.9x**	**12.3x**	**8.4x**	**7.4x**	**6.6x**	**4.8%**	**5.1%**	**5.8%**	**6.3%**	**6.7%**	**-2.2%**	**1.3%**	**5.6%**	**8.1%**	**9.3%**
Big Five			**7.1x**	**7.1x**	**6.0x**	**5.6x**	**5.2x**	**5.9x**	**6.1x**	**5.1x**	**4.8x**	**4.5x**	**16.1x**	**17.0x**	**12.0x**	**10.9x**	**9.9x**	**5.7%**	**5.8%**	**6.0%**	**6.3%**	**6.5%**	**-0.9%**	**1.9%**	**5.6%**	**7.0%**	**7.9%**
North America			**9.7x**	**9.3x**	**7.5x**	**7.0x**	**6.4x**	**8.5x**	**7.8x**	**6.4x**	**6.0x**	**5.6x**	**23.9x**	**23.8x**	**15.8x**	**14.6x**	**13.1x**	**4.3%**	**4.4%**	**4.7%**	**5.1%**	**5.2%**	**-1.9%**	**1.3%**	**4.9%**	**5.7%**	**6.6%**
Europe			**5.7x**	**5.6x**	**4.8x**	**4.5x**	**4.2x**	**4.4x**	**4.7x**	**3.9x**	**3.6x**	**3.4x**	**14.0x**	**14.7x**	**9.8x**	**8.7x**	**7.8x**	**6.5%**	**6.6%**	**6.7%**	**6.9%**	**7.1%**	**-2.7%**	**2.0%**	**6.1%**	**8.4%**	**9.8%**
GEM			**4.6x**	**4.9x**	**4.2x**	**3.9x**	**3.6x**	**2.9x**	**3.0x**	**2.5x**	**2.3x**	**2.2x**	**8.4x**	**7.3x**	**5.0x**	**4.4x**	**3.9x**	**3.9%**	**4.4%**	**6.1%**	**7.0%**	**7.8%**	**-2.2%**	**0.6%**	**5.7%**	**9.9%**	**11.3%**

Source: UBS estimates

			EV/DACF					P/CEPS					P/E					FCF Yield					Production (kboe/d)			EV/1P
Company	Country	Price	2015E	2016E	2017E	2018E	2019E	2015E	2016E	2017E	2018E	2019E	2015E	2016E	2017E	2018E	2019E	2015E	2016E	2017E	2018E	2019E	Non-dom	2014-17 CAGR	Gas %	$/bbl
Anadarko Petroleum	US ($)	68.34	9.6x	10.5x	7.7x	6.7x	5.3x	7.9x	8.1x	5.6x	4.7x	4.2x	n/m	n/m	62.0x	29.7x	20.7x	-2.0%	-0.6%	1.6%	1.4%	3.3%	10.9%	0.7%	51.2	17.80
Apache Corp.	US ($)	42.50	8.3x	7.4x	5.4x	5.0x	4.4x	6.1x	5.5x	3.9x	3.5x	3.1x	n/m	n/m	25.8x	18.4x	12.3x	-13.3%	-5.6%	-4.0%	-4.3%	-2.9%	55.0%	-4.8%	40.1	9.41
Cabot Oil & Gas	US ($)	22.78	13.2x	10.4x	5.9x	4.6x	3.6x	12.0x	9.3x	5.1x	4.0x	3.4x	>100x	57.4x	14.7x	9.9x	8.1x	-2.0%	-0.8%	3.9%	6.0%	7.0%	0.0%	16.0%	95.5	9.24
Canadian Natural	Canada (C$)	27.44	8.5x	7.8x	5.3x	4.4x	3.5x	5.9x	5.2x	3.7x	3.2x	2.8x	n/m	>100x	14.5x	10.7x	7.9x	-2.1%	1.7%	3.7%	10.4%	14.3%	65.1%	4.1%	32.8	6.45
Chesapeake Energy	US ($)	7.27	8.1x	15.4x	9.7x	8.1x	7.1x	3.5x	9.6x	3.5x	2.6x	2.3x	n/m	n/m	49.8x	13.3x	9.7x	-31.6%	-40.4%	-19.2%	-12.1%	-10.6%	0.0%	-2.7%	70.8	7.09
CNOOC Ltd	China (Rmb)	8.80	4.2x	3.9x	3.0x	2.6x	2.1x	3.3x	3.3x	2.8x	2.7x	2.4x	14.9x	16.0x	8.5x	7.2x	5.9x	-3.6%	9.7%	14.7%	13.8%	17.3%	37.6%	4.9%	18.8	15.54
Concho	US ($)	104.47	9.7x	9.3x	8.5x	7.1x	6.1x	8.3x	8.2x	7.3x	5.9x	5.0x	>100x	>100x	>100x	49.8x	30.3x	-4.6%	-0.1%	-0.6%	-0.5%	0.7%	0.0%	14.7%	35.6	25.37
ConocoPhillips	US ($)	47.20	10.0x	8.3x	6.7x	5.8x	5.5x	7.7x	6.5x	4.7x	4.0x	3.7x	n/m	n/m	32.6x	20.1x	16.6x	-7.1%	0.0%	8.4%	8.0%	7.2%	88.1%	3.5%	42.7	9.27
Continental	US ($)	30.72	10.0x	8.5x	6.1x	5.0x	4.1x	7.4x	6.0x	4.1x	3.3x	2.8x	n/m	>100x	22.7x	14.6x	10.8x	-12.5%	-1.5%	4.0%	5.0%	5.8%	0.0%	12.0%	30.0	13.74
Crescent Point	Canada (C$)	16.62	5.9x	6.4x	6.0x	5.8x	5.1x	4.2x	4.5x	4.2x	4.0x	3.4x	>100x	n/m	>100x	>100x	32.3x	4.3%	5.3%	5.8%	5.3%	7.8%	12.8%	7.9%	8.8%	18.14
Devon Energy	US ($)	40.14	5.7x	9.7x	6.1x	5.0x	4.3x	4.0x	7.1x	4.2x	3.4x	2.9x	20.6x	n/m	22.3x	12.7x	9.1x	-0.3%	-2.4%	2.0%	1.7%	4.1%	15.7%	1.0%	47.5	9.54
Encana	Canada ($)	6.83	6.0x	6.9x	4.9x	3.5x	2.5x	3.9x	4.2x	2.7x	2.0x	1.5x	n/m	>100x	10.1x	5.4x	3.5x	-9.4%	-7.6%	2.4%	12.3%	15.3%	40.5%	-4.9%	81.9	7.35
EOG Resources	US ($)	76.89	11.4x	11.1x	8.1x	6.9x	5.8x	10.9x	10.4x	7.4x	6.3x	5.4x	n/m	n/m	49.5x	30.2x	20.8x	-1.8%	-0.3%	1.1%	1.2%	1.9%	13.4%	2.0%	37.9	18.81
Hess Corp.	US ($)	56.35	7.6x	6.3x	4.5x	4.0x	3.6x	6.8x	5.6x	3.9x	3.4x	3.1x	n/m	n/m	n/m	n/m	>100x	-12.9%	-6.1%	-2.2%	-0.2%	3.3%	46.3%	5.5%	26.0	12.86
Lundin Petroleum	Sweden ($)	107.20	23.9x	7.2x	5.5x	6.4x	7.7x	10.4x	3.2x	2.4x	2.5x	2.9x	n/m	23.1x	17.9x	18.5x	21.7x	-27.7%	-16.4%	-6.1%	-11.7%	-17.1%	29.5%	45.8%	23.5	42.76
Marathon Oil	US ($)	16.36	7.0x	7.2x	6.0x	4.2x	3.5x	6.4x	5.0x	3.3x	2.6x	2.1x	n/m	n/m	n/m	>100x	27.1x	-15.1%	-2.1%	6.0%	0.7%	7.3%	45.1%	0.1%	30.6	7.74
Murphy Oil	US ($)	28.64	6.6x	6.0x	4.9x	5.9x	16.9x	4.5x	3.6x	2.8x	2.6x	2.5x	n/m	n/m	n/m	n/m	n/m	-22.1%	-11.3%	-1.6%	3.8%	33.3%	63.0%	-5.1%	33.1	11.00
Noble Energy	US ($)	30.73	2.5x	8.4x	6.5x	5.6x	4.4x	5.6x	6.0x	4.6x	3.6x	2.8x	>100x	n/m	68.9x	24.7x	13.7x	10.8%	-0.8%	-5.8%	-7.7%	-11.5%	41.1%	12.8%	55.5	14.89
Occidental Petroleum	US ($)	69.65	13.0x	11.4x	8.4x	7.4x	6.5x	12.3x	10.1x	7.0x	6.1x	5.3x	>100x	>100x	27.3x	20.5x	15.6x	-2.7%	1.4%	3.8%	4.4%	5.3%	39.2%	0.7%	25.5	20.57
Oil & Natural Gas	India (INR)	225.60	5.2x	4.4x	4.0x	4.0x	4.0x	5.4x	4.5x	4.1x	4.0x	4.0x	10.6x	6.7x	6.8x	6.3x	6.7x	0.7%	4.0%	-2.3%	-3.0%	-2.1%	16.0%	2.3%	40.8	5.27
Pioneer Natural Res.	US ($)	118.38	11.2x	10.7x	9.3x	7.1x	5.4x	11.6x	10.4x	8.1x	5.8x	4.3x	n/m	n/m	>100x	41.6x	21.1x	-1.9%	-6.8%	-4.1%	-1.7%	2.5%	0.0%	12.8%	31.6	25.71
PTT E&P (F)	Thailand (Bt)	73.50	2.2x	2.1x	2.1x	2.0x	1.8x	2.3x	2.2x	2.0x	2.1x	2.1x	12.2x	13.2x	8.9x	8.4x	7.9x	9.9%	2.7%	2.4%	13.5%	19.6%	20.0%	0.9%	59.5	10.25
Range Resources	US ($)	36.50	11.2x	12.6x	7.7x	5.4x	4.0x	9.0x	10.3x	5.6x	3.8x	2.9x	>100x	n/m	65.8x	20.9x	13.1x	-1.3%	-1.1%	3.0%	6.5%	9.7%	0.0%	19.5%	67.6	5.65
Southwestern Energy	US ($)	15.36	9.7x	8.9x	6.0x	4.0x	3.2x	4.6x	4.2x	2.8x	2.6x	2.4x	96.1x	>100x	14.6x	9.3x	8.8x	-9.5%	-4.6%	0.4%	2.1%	-0.3%	0.0%	16.3%	99.6	7.04
Tullow	UK ($)	200.40	8.1x	7.4x	6.3x	6.1x	5.8x	2.3x	2.1x	1.6x	1.4x	1.2x	50.8x	n/m	29.4x	18.0x	10.7x	-42.5%	-13.8%	-14.2%	-14.8%	-7.4%	84.3%	14.2%	24.6	21.74
Woodside Petroleum	Australia (A$)	30.59	6.8x	8.5x	6.6x	5.5x	5.1x	7.2x	8.6x	6.8x	5.8x	5.8x	16.7x	24.5x	14.5x	11.2x	10.9x	6.1%	9.0%	15.5%	18.9%	18.1%	1.0%	-2.9%	78.0	20.55
North America			**7.2x**	**8.3x**	**6.8x**	**5.7x**	**4.7x**	**7.1x**	**7.1x**	**4.9x**	**4.1x**	**3.5x**	**34.0x**	**57.4x**	**28.3x**	**18.7x**	**13.9x**	**-4.9%**	**-1.7%**	**2.1%**	**3.0%**	**4.7%**	**27%**	**3%**	**42%**	**14.44**
International			**3.8x**	**4.4x**	**3.7x**	**3.4x**	**3.0x**	**3.9x**	**3.8x**	**3.2x**	**3.0x**	**2.8x**	**13.3x**	**12.3x**	**8.7x**	**7.7x**	**7.0x**	**-1.4%**	**6.1%**	**8.1%**	**8.6%**	**10.8%**	**31%**	**4%**	**38%**	**14.40**
Global			**-15.5x**	**-0.3x**	**5.0x**	**4.7x**	**4.0x**	**6.1x**	**5.9x**	**4.4x**	**3.8x**	**3.4x**	**15.5x**	**13.1x**	**17.5x**	**13.7x**	**11.2x**	**-4.0%**	**0.1%**	**3.5%**	**4.3%**	**6.1%**	**28%**	**3%**	**41%**	**14.43**

Source: UBS estimates

Global integrated oil and producers ratings, targets, performance

				Price	Forecast			Absolute $				Absolute local				Rel. local market				Rel. MSCI Global				Rel. MSCI Oil & Gas		
Company	Rating	Unit	Price	Target	Upside	1w	1m	3m	12m	ytd	1m	3m	12m	ytd	1m	3m	12m	ytd	1m	3m	12m	ytd	1m	3m	12m	ytd
BG Group	Buy	p	958	1300.00	36%	-5%	-14%	-14%	-28%	8%	-12%	-13%	-22%	11%	-4%	-2%	-15%	17%	-6%	-5%	-22%	14%	-5%	5%	14%	39%
BP	Buy	p	338	420.00	24%	-8%	-16%	-24%	-31%	-20%	-13%	-23%	-26%	-18%	-5%	-14%	-18%	-13%	-7%	-16%	-26%	-15%	-7%	-7%	9%	3%
Cenovus	Buy	C$	14	21.00	53%	-3%	-4%	-15%	-56%	-34%	-4%	-15%	-56%	-34%	5%	-8%	-55%	-29%	6%	-6%	-53%	-30%	6%	4%	-31%	-14%
Chevron	Neutral	$	77	81.00	6%	-5%	-10%	-24%	-40%	-32%	-10%	-24%	-40%	-32%	-2%	-18%	-37%	-27%	-1%	-16%	-35%	-28%	-1%	-7%	-5%	-12%
Eni	Buy	€	14	16.50	14%	0%	-6%	-10%	-36%	-9%	-8%	-10%	-26%	0%	-1%	-3%	-30%	-14%	3%	-1%	-32%	-3%	3%	10%	0%	18%
ExxonMobil	Neutral	$	72	77.00	6%	-3%	-6%	-14%	-26%	-22%	-6%	-14%	-26%	-22%	2%	-6%	-23%	-16%	3%	-5%	-21%	-17%	3%	6%	16%	1%
GALP	Buy	€	9	12.00	34%	-6%	-11%	-16%	-43%	-2%	-13%	-16%	-34%	7%	-1%	-3%	-24%	-2%	-2%	-7%	-39%	4%	-2%	3%	-11%	26%
Gazprom	Buy	$	4	6.00	43%	-5%	-6%	-16%	-44%	-10%	-6%	-16%	-44%	-10%	6%	-5%	-34%	-2%	4%	-7%	-40%	-5%	4%	3%	-12%	16%
Gazprom Neft	Neutral	$	12	12.00	3%	1%	3%	-4%	-42%	0%	3%	-4%	-42%	0%	9%	11%	-9%	3%	13%	6%	-37%	9%	14%	18%	-8%	33%
Husky	Buy	C$	22	28.00	27%	-6%	-8%	-12%	-44%	-30%	-7%	-7%	-32%	-20%	0%	4%	-21%	-13%	1%	-3%	-40%	-26%	2%	7%	-12%	-10%
Imperial Oil	Sell	C$	44	47.00	8%	-5%	-9%	-16%	-37%	-24%	-8%	-11%	-22%	-13%	-1%	-1%	-10%	-5%	0%	-7%	-32%	-19%	0%	3%	0%	-2%
Lukoil	Neutral	$	36	37.00	2%	-4%	-8%	-20%	-37%	-9%	-8%	-20%	-37%	-9%	-3%	-7%	-2%	-9%	1%	-11%	-32%	-4%	1%	-1%	-1%	17%
MOL	Neutral	HUF	13650	15000.0	10%	-3%	-6%	-10%	-4%	9%	-7%	-9%	12%	18%	-1%	-5%	-2%	-8%	4%	0%	3%	16%	4%	10%	51%	41%
Novatek	Buy	$	92	105.00	14%	-4%	-6%	-7%	-15%	16%	-6%	-7%	-15%	16%	-1%	9%	32%	17%	3%	4%	-9%	24%	3%	15%	33%	51%
OMV	Neutral	€	22	23.00	3%	-3%	-3%	-16%	-35%	-7%	-6%	-15%	-24%	1%	4%	-2%	-21%	-3%	6%	-7%	-30%	-1%	7%	3%	2%	20%
Petrobras	Buy	BrR	9	17.00	100%	-12%	-25%	-46%	-78%	-41%	-16%	-34%	-63%	-15%	-10%	-24%	-51%	-9%	-17%	-40%	-77%	-38%	-17%	-34%	-66%	-24%
PetroChina	Buy	HK$	6	7.80	34%	-10%	-21%	-36%	-50%	-32%	-21%	-36%	-50%	-32%	-8%	-15%	-39%	-23%	-13%	-29%	-46%	-29%	-13%	-21%	-21%	-13%
PTT Public	Buy	THB	260	320.00	23%	-3%	-20%	-27%	-30%	-26%	-18%	-23%	-21%	-20%	-15%	-16%	-9%	-12%	-12%	-20%	-25%	-22%	-12%	-11%	10%	-5%
Reliance	Buy	₹	836	1090.00	30%	-5%	-19%	-12%	-26%	-11%	-15%	-8%	-18%	-6%	-6%	-3%	-12%	3%	-11%	-3%	-21%	-6%	-11%	8%	16%	15%
Repsol	Neutral	€	12	12.00	2%	-11%	-20%	-32%	-48%	-30%	-22%	-31%	-39%	-24%	-11%	-22%	-31%	-21%	-12%	-24%	-44%	-26%	-12%	-16%	-17%	-10%
Rosneft	Neutral	$	4	3.70	1%	-3%	-1%	-13%	-42%	3%	-1%	-13%	-42%	3%	5%	1%	-10%	4%	9%	-3%	-38%	10%	10%	7%	-9%	34%
RD Shell	Buy	p	1605	2050.00	28%	-7%	-14%	-17%	-39%	-27%	-12%	-16%	-34%	-25%	-4%	-5%	-28%	-21%	-6%	-8%	-34%	-23%	-6%	2%	-4%	-6%
Sasol	Sell	ZAR	42964	40000	-7%	-5%	-8%	-9%	-48%	-17%	0%	2%	-33%	0%	7%	7%	-28%	1%	1%	1%	-44%	-12%	1%	12%	-18%	7%
Sinopec	Buy	HK$	5	8.00	66%	-7%	-17%	-28%	-41%	-23%	-17%	-28%	-41%	-23%	-2%	-5%	-28%	-13%	-8%	-20%	-36%	-19%	-8%	-12%	-7%	-1%
Statoil	Buy	NKr	121	160.00	32%	-5%	-12%	-21%	-49%	-18%	-11%	-16%	-33%	-8%	-3%	-6%	-26%	-8%	-3%	-13%	-46%	-13%	-3%	-4%	-20%	7%
Suncor	Buy	C$	35	42.00	20%	-6%	-6%	-9%	-35%	-17%	-5%	-3%	-21%	-5%	2%	8%	-8%	3%	3%	1%	-30%	-12%	4%	12%	2%	7%
Surgutneftegaz	Sell	$	34	26.00	-24%	-6%	-7%	-12%	-31%	18%	0%	7%	27%	45%	-2%	2%	8%	23%	2%	-3%	-26%	30%	2%	8%	9%	59%
TOTAL	Neutral	€	40	41.50	5%	-3%	-8%	-13%	-34%	-13%	-11%	-12%	-23%	-6%	1%	-3%	-24%	-11%	1%	-3%	-29%	-9%	1%	7%	5%	11%
Global					22%	-6%	-12%	-20%	-38%	-20%	-11%	-19%	-33%	-17%	-2%	-7%	-25%	-13%	-3%	-12%	-33%	-15%	-3%	-2%	-2%	3%
Big Five					12%	-5%	-10%	-17%	-33%	-23%	-9%	-17%	-30%	-22%	-1%	-9%	-26%	-18%	-1%	-8%	-28%	-19%	-1%	1%	6%	-1%
North America					9%	-4%	-7%	-16%	-32%	-25%	-7%	-16%	-30%	-23%	1%	-8%	-26%	-17%	2%	-7%	-27%	-20%	2%	2%	7%	-3%
Europe					21%	-5%	-12%	-17%	-36%	-17%	-12%	-16%	-28%	-12%	-3%	-6%	-24%	-12%	-3%	-8%	-31%	-12%	-3%	2%	1%	8%
Russia					12%	-4%	-5%	-13%	-36%	1%	-4%	-11%	-29%	5%	2%	0%	-6%	5%	5%	-4%	-31%	9%	5%	6%	1%	32%
GEM					34%	-7%	-15%	-26%	-44%	-20%	-14%	-24%	-40%	-16%	-4%	-8%	-26%	-10%	-7%	-18%	-40%	-15%	-7%	-9%	-12%	4%

Source: UBS, Datastream

				Price	Forecast			Absolute $				Absolute local				Rel. local market				Rel. MSCI Global				Rel. MSCI Oil & Gas		
Company	Rating	Unit	Price	Target	Upside	1w	1m	3m	12m	ytd	1m	3m	12m	ytd	1m	3m	12m	ytd	1m	3m	12m	ytd	1m	3m	12m	ytd
Anadarko	Buy	$	68.34	82.00	20%	-4%	-8%	-19%	-39%	-17%	-8%	-19%	-39%	-17%	1%	-12%	-36%	-11%	2%	-11%	-34%	-12%	1%	-1%	-2%	7%
Apache	Neutral	$	42.50	46.00	8%	-5%	-4%	-28%	-58%	-32%	-4%	-28%	-58%	-32%	5%	-22%	-56%	-27%	5%	-21%	-54%	-28%	5%	-12%	-33%	-13%
Cabot	Buy	$	22.78	30.00	32%	-2%	-10%	-33%	-33%	-23%	-10%	-33%	-33%	-23%	-2%	-27%	-30%	-18%	-1%	-26%	-27%	-19%	-1%	-17%	7%	-1%
Canadian Natural	Buy	C$	27.44	35.00	28%	-5%	-16%	-31%	-51%	-33%	-15%	-27%	-40%	-24%	-9%	-19%	-31%	-17%	-7%	-25%	-47%	-29%	-8%	-16%	-22%	-14%
Chesapeake	Sell	$	7.27	5.00	-31%	-2%	3%	-45%	-73%	-63%	3%	-45%	-73%	-63%	13%	-40%	-71%	-60%	14%	-39%	-70%	-61%	13%	-32%	-56%	-52%
CNOOC	Buy	HK$	8.80	10.40	18%	-5%	-9%	-25%	-44%	-16%	-9%	-25%	-44%	-16%	7%	-2%	-32%	-5%	0%	-17%	-40%	-11%	0%	-8%	-11%	9%
Concho	Neutral	$	104.47	115.00	10%	-1%	-1%	-12%	-25%	5%	-1%	-12%	-25%	5%	8%	-4%	-22%	12%	9%	-3%	-20%	11%	8%	8%	19%	35%
ConocoPhillips	Neutral	$	47.20	49.00	4%	1%	-4%	-25%	-42%	-32%	-4%	-25%	-42%	-32%	5%	-18%	-39%	-27%	6%	-18%	-37%	-28%	5%	-8%	-7%	-12%
Continental	Neutral	$	30.72	32.00	4%	-1%	-4%	-34%	-62%	-20%	-4%	-34%	-62%	-20%	5%	-28%	-60%	-14%	6%	-27%	-59%	-15%	5%	-19%	-39%	3%
Crescent Point	Neutral	C$	16.62	18.00	8%	8%	-11%	-43%	-68%	-46%	-10%	-39%	-62%	-38%	-3%	-32%	-55%	-33%	-1%	-37%	-66%	-43%	-2%	-30%	-50%	-30%
Devon	Neutral	$	40.14	43.00	7%	-5%	-15%	-37%	-46%	-34%	-15%	-37%	-46%	-34%	-7%	-31%	-44%	-30%	-6%	-31%	-42%	-31%	-6%	-23%	-14%	-16%
Encana	Buy	$	6.83	10.00	46%	-4%	1%	-44%	-70%	-51%	1%	-44%	-70%	-51%	10%	-39%	-69%	-47%	11%	-38%	-68%	-48%	11%	-31%	-53%	-37%
EOG	Neutral	$	76.89	80.00	4%	-1%	1%	-14%	-29%	-16%	1%	-14%	-29%	-16%	10%	-7%	-26%	-11%	11%	-6%	-23%	-12%	11%	5%	14%	7%
Hess	Buy	$	56.35	73.00	30%	-2%	1%	-15%	-44%	-24%	1%	-15%	-44%	-24%	10%	-7%	-42%	-18%	11%	-6%	-40%	-19%	11%	5%	-11%	-2%
Lundin Petroleum	Neutral	SEK	107.20	110.00	3%	-6%	-7%	-19%	-31%	-12%	-10%	-19%	-17%	-5%	-1%	-12%	-23%	-7%	2%	-11%	-26%	-7%	2%	-1%	10%	13%
Marathon	Buy	$	16.36	21.00	28%	-2%	-17%	-39%	-60%	-42%	-17%	-39%	-60%	-42%	-10%	-34%	-59%	-38%	-9%	-33%	-57%	-39%	-9%	-26%	-37%	-26%
Murphy	Neutral	$	28.64	30.00	5%	-5%	-10%	-32%	-53%	-43%	-10%	-32%	-53%	-43%	-1%	-26%	-51%	-39%	0%	-26%	-50%	-40%	-1%	-17%	-26%	-27%
Noble	Buy	$	30.73	36.00	17%	-11%	-8%	-31%	-57%	-35%	-8%	-31%	-57%	-35%	1%	-25%	-55%	-31%	1%	-24%	-53%	-32%	1%	-15%	-31%	-17%
Occidental	Neutral	$	69.65	72.00	3%	-3%	1%	-12%	-32%	-14%	1%	-12%	-32%	-14%	11%	-4%	-29%	-7%	12%	-3%	-27%	-9%	11%	8%	8%	11%
ONGC	Buy	₹	225.60	356.00	58%	-8%	-20%	-30%	-53%	-38%	-16%	-27%	-48%	-34%	-6%	-22%	-45%	-28%	-12%	-23%	-50%	-34%	-12%	-14%	-26%	-20%
Pioneer	Buy	$	118.38	156.00	32%	-2%	-6%	-22%	-43%	-20%	-6%	-22%	-43%	-20%	3%	-15%	-40%	-15%	4%	-14%	-38%	-16%	3%	-4%	-9%	2%
PTTEP	Buy	THB	73.50	93.00	27%	-9%	-20%	-35%	-60%	-40%	-18%	-31%	-55%	-34%	-14%	-24%	-48%	-28%	-12%	-29%	-57%	-36%	-12%	-20%	-36%	-23%
Range	Neutral	$	36.50	40.00	10%	-5%	0%	-33%	-52%	-32%	0%	-33%	-52%	-32%	9%	-27%	-50%	-27%	10%	-27%	-48%	-28%	10%	-18%	-24%	-12%
Southwestern	Buy	$	15.36	22.00	43%	-4%	-7%	-37%	-62%	-44%	-7%	-37%	-62%	-44%	1%	-31%	-60%	-40%	2%	-31%	-59%	-41%	2%	-23%	-40%	-28%
Tullow	Neutral	p	200.40	195.00	-3%	-11%	-20%	-48%	-75%	-53%	-18%	-47%	-73%	-52%	-9%	-41%	-70%	-49%	-12%	-42%	-73%	-50%	-12%	-36%	-60%	-39%
Woodside	Neutral	A$	30.59	32.40	6%	-8%	-18%	-21%	-48%	-32%	-12%	-13%	-29%	-20%	-2%	-6%	-21%	-14%	-9%	-14%	-44%	-28%	-10%	-4%	-17%	-12%
North America					**13%**	**-2%**	**-5%**	**-24%**	**-43%**	**-25%**	**-5%**	**-23%**	**-42%**	**-24%**	**4%**	**-16%**	**-39%**	**-19%**	**5%**	**-16%**	**-39%**	**-21%**	**5%**	**-6%**	**-9%**	**-4%**
International					**29%**	**-7%**	**-14%**	**-27%**	**-48%**	**-26%**	**-12%**	**-24%**	**-43%**	**-23%**	**0%**	**-11%**	**-35%**	**-15%**	**-6%**	**-20%**	**-44%**	**-22%**	**-6%**	**-10%**	**-18%**	**-5%**
Global					**17%**	**-3%**	**-7%**	**-24%**	**-44%**	**-25%**	**-6%**	**-24%**	**-42%**	**-24%**	**3%**	**-15%**	**-38%**	**-18%**	**3%**	**-17%**	**-40%**	**-21%**	**2%**	**-7%**	**-11%**	**-4%**

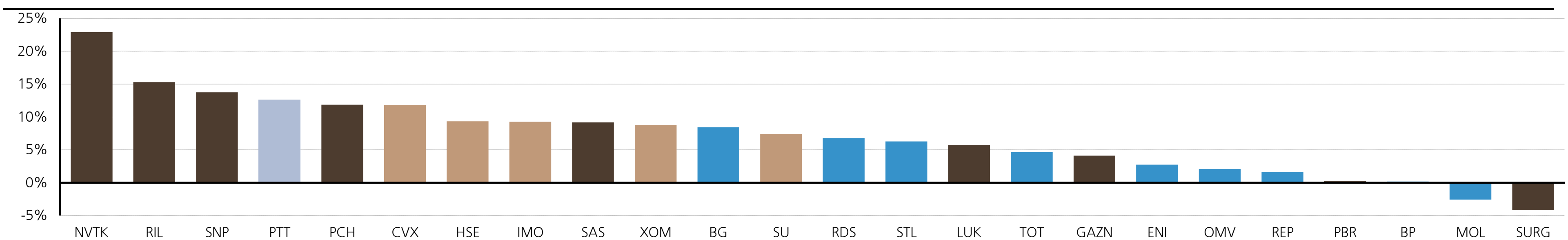
Source: UBS, Datastream

Total shareholder returns

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	10yr CAGR	2015YTD
BG Group	5%	7%	21%	33%	48%	39%	71%	-39%	33%	12%	8%	-22%	33%	-36%	8%	10%
BP	-1%	-8%	23%	23%	14%	8%	14%	-35%	37%	-25%	3%	1%	23%	-17%	0%	-16%
Cenovus	-	-	-	-	-	-	-	-	-	37%	1%	3%	-12%	-25%	-	-32%
Chevron	9%	-23%	35%	22%	15%	34%	31%	-18%	8%	24%	19%	5%	19%	-7%	12%	-29%
Eni	1%	33%	25%	36%	21%	27%	14%	-33%	17%	-8%	3%	22%	6%	-23%	3%	-6%
ExxonMobil	-8%	-9%	21%	25%	14%	39%	24%	-13%	-13%	12%	16%	5%	20%	-6%	9%	-20%
GALP	-	-	-	-	-	-	198%	-62%	77%	17%	-23%	5%	8%	-36%	-	-1%
Gazprom	-	-	-	-	-	-	23%	-75%	72%	6%	-14%	-7%	-6%	-46%	-	2%
Gazprom Neft	268%	208%	59%	6%	43%	28%	49%	-66%	179%	-20%	15%	5%	6%	-43%	4%	-7%
Husky	6%	3%	87%	61%	84%	36%	38%	-42%	19%	-2%	-6%	28%	12%	-22%	9%	-27%
Imperial Oil	8%	4%	60%	34%	70%	13%	51%	-40%	18%	7%	10%	-3%	4%	-1%	9%	-23%
Lukoil	36%	31%	57%	33%	104%	48%	-1%	-62%	82%	5%	-4%	32%	0%	-37%	6%	2%
MOL	8%	31%	32%	130%	36%	23%	28%	-62%	75%	13%	-28%	13%	-14%	-31%	-3%	13%
Novatek	-	-	-	-	123%	166%	21%	-79%	262%	98%	14%	-6%	9%	-39%	23%	25%
OMV	12%	22%	57%	106%	101%	-2%	46%	-67%	76%	-1%	-23%	21%	37%	-42%	2%	-3%
Petrobras	-3%	-30%	110%	39%	97%	46%	139%	-59%	110%	-21%	-30%	-21%	-28%	-45%	0%	-28%
PetroChina	16%	19%	211%	-1%	60%	80%	30%	-49%	42%	15%	-3%	18%	-19%	5%	12%	-31%
PTT Public	-	35%	408%	-2%	28%	12%	100%	-53%	51%	49%	-2%	11%	-17%	18%	13%	-25%
Reliance	-13%	0%	105%	1%	61%	145%	154%	-64%	83%	1%	-43%	17%	-5%	-1%	15%	-10%
Repsol	-7%	-8%	50%	35%	16%	20%	5%	-39%	38%	7%	15%	-29%	32%	-18%	2%	-29%
Rosneft	-	-	-	-	-	-	3%	-61%	132%	-13%	-6%	37%	-10%	-55%	-	15%
RD Shell	-14%	-1%	18%	19%	14%	14%	23%	-38%	26%	19%	22%	-3%	12%	-3%	7%	-27%
Sasol	42%	45%	23%	62%	67%	6%	39%	-36%	38%	33%	-5%	-6%	20%	-21%	9%	-16%
Sinopec	-9%	32%	179%	-5%	25%	92%	66%	-59%	52%	13%	12%	13%	-1%	3%	14%	-21%
Statoil	-	28%	40%	42%	55%	22%	24%	-46%	63%	1%	13%	0%	2%	-23%	6%	-14%
Suncor	30%	-4%	62%	40%	80%	26%	39%	-65%	86%	10%	-24%	16%	9%	-7%	7%	-15%
Surgutneftegaz	49%	5%	86%	27%	49%	44%	-20%	-54%	67%	21%	-23%	13%	0%	-54%	-4%	32%
TOTAL	-1%	3%	37%	24%	20%	20%	20%	-32%	26%	-11%	2%	5%	27%	-12%	5%	-12%
Global	**-2%**	**1%**	**40%**	**25%**	**28%**	**29%**	**39%**	**-38%**	**47%**	**7%**	**4%**	**6%**	**9%**	**-11%**	**8%**	**-17%**
Big Five	**-5%**	**-7%**	**25%**	**23%**	**15%**	**25%**	**23%**	**-24%**	**13%**	**8%**	**15%**	**3%**	**20%**	**-7%**	**7%**	**-21%**
North America	**-2%**	**-11%**	**29%**	**26%**	**24%**	**36%**	**29%**	**-18%**	**5%**	**15%**	**13%**	**6%**	**17%**	**-7%**	**9%**	**-23%**
Europe	**-5%**	**3%**	**26%**	**28%**	**22%**	**17%**	**26%**	**-37%**	**34%**	**0%**	**10%**	**1%**	**18%**	**-15%**	**4%**	**-14%**
Russia	**38%**	**42%**	**33%**	**11%**	**29%**	**18%**	**15%**	**-68%**	**105%**	**12%**	**-7%**	**13%**	**-3%**	**-46%**	**4%**	**12%**
GEM	**-1%**	**12%**	**167%**	**17%**	**65%**	**70%**	**67%**	**-53%**	**65%**	**5%**	**-11%**	**7%**	**-14%**	**0%**	**12%**	**-26%**

Source: DataStream

Figure 26: 10yr total return CAGR

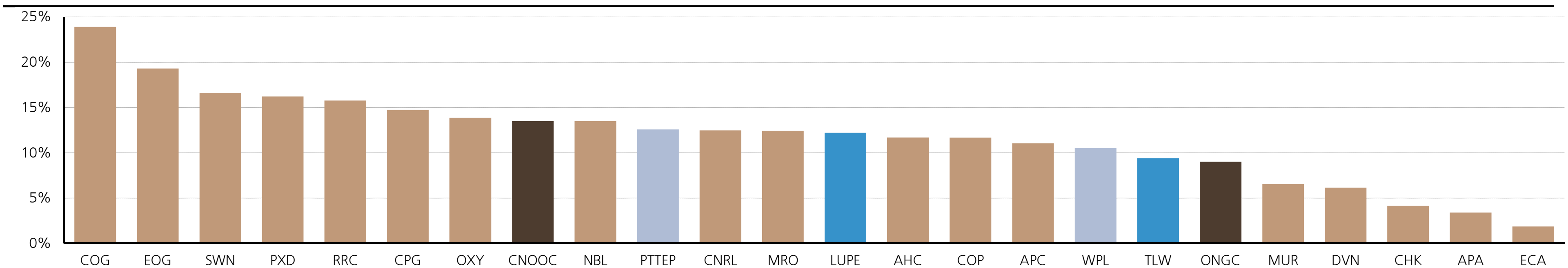


Source: DataStream

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	10yr CAGR	2015 YTD
Anadarko	-20%	-15%	8%	23%	54%	-7%	52%	-41%	63%	24%	0%	-2%	7%	5%	11%	-16%
Apache	-21%	15%	50%	20%	43%	-2%	63%	-30%	40%	18%	-25%	-13%	11%	-26%	3%	-31%
Cabot	-22%	4%	19%	47%	58%	35%	34%	-35%	68%	-11%	98%	31%	56%	-23%	24%	-23%
Canadian Natural	-12%	25%	73%	69%	134%	9%	38%	-46%	85%	25%	-16%	-22%	20%	-6%	12%	-32%
Chesapeake	-35%	18%	78%	15%	107%	-8%	36%	-58%	62%	4%	-15%	-24%	66%	-23%	4%	-62%
CNOOC	-	42%	59%	43%	31%	45%	85%	-43%	75%	60%	-26%	28%	-11%	-25%	14%	-13%
Concho	-	-	-	-	-	-	-	11%	97%	98%	5%	-14%	34%	-8%	-	5%
ConocoPhillips	9%	-17%	40%	31%	41%	27%	25%	-40%	3%	39%	11%	9%	27%	2%	12%	-29%
Continental	-	-	-	-	-	-	-	-21%	107%	37%	13%	10%	53%	-32%	-	-20%
Crescent Point	-	-	-	55%	42%	-4%	87%	-15%	111%	27%	5%	-8%	10%	-36%	15%	-42%
Devon	-36%	19%	25%	30%	69%	8%	34%	-26%	13%	8%	-20%	-15%	21%	0%	6%	-34%
Encana	-	-	28%	39%	67%	3%	50%	-30%	34%	-5%	-36%	11%	-5%	-22%	2%	-50%
EOG	-28%	3%	16%	45%	121%	-15%	44%	-25%	47%	-5%	7%	23%	40%	10%	19%	-16%
Hess	-13%	-10%	-1%	52%	61%	18%	105%	-47%	14%	29%	-26%	-6%	58%	-10%	12%	-23%
Lundin Petroleum	-	160%	351%	20%	86%	9%	-10%	-50%	53%	106%	92%	-7%	-15%	-26%	12%	-12%
Marathon	12%	-26%	61%	14%	71%	55%	34%	-54%	18%	24%	31%	7%	18%	-18%	12%	-41%
Murphy	42%	4%	55%	19%	42%	-5%	69%	-47%	24%	43%	-25%	14%	29%	-20%	7%	-42%
Noble	-23%	7%	19%	32%	39%	22%	63%	-37%	46%	20%	12%	9%	35%	-30%	14%	-34%
Occidental	13%	11%	53%	37%	44%	24%	60%	-21%	38%	23%	-3%	-16%	28%	-9%	14%	-12%
ONGC	15%	168%	163%	13%	44%	16%	66%	-54%	85%	18%	-33%	6%	-2%	20%	9%	-37%
Pioneer	-2%	31%	26%	8%	51%	-22%	24%	-67%	199%	84%	1%	19%	73%	-19%	16%	-20%
PTTEP	7%	45%	113%	15%	61%	19%	88%	-35%	49%	30%	-1%	7%	-2%	-30%	13%	-38%
Range	-34%	19%	75%	103%	107%	5%	88%	-33%	45%	-8%	36%	2%	34%	-36%	16%	-32%
Southwestern	0%	10%	109%	97%	205%	-2%	59%	4%	66%	-21%	-16%	5%	18%	-31%	17%	-44%
Tullow	13%	43%	-2%	92%	62%	70%	69%	-26%	124%	-7%	12%	-5%	-30%	-54%	9%	-53%
Woodside	-15%	5%	66%	44%	88%	7%	51%	-41%	72%	5%	-26%	16%	3%	-6%	11%	-28%
North America	**-4%**	**-3%**	**39%**	**33%**	**67%**	**16%**	**46%**	**-34%**	**42%**	**24%**	**-1%**	**-1%**	**30%**	**-9%**	**12%**	**-24%**
International	**1%**	**83%**	**117%**	**30%**	**52%**	**27%**	**72%**	**-44%**	**79%**	**35%**	**-16%**	**16%**	**-7%**	**-10%**	**12%**	**-24%**
Global	**-3%**	**14%**	**58%**	**32%**	**64%**	**18%**	**53%**	**-36%**	**52%**	**27%**	**-5%**	**5%**	**21%**	**-9%**	**12%**	**-24%**

Source: DataStream

Figure 27: 10yr total return CAGR



Source: DataStream

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Energy markets summary

The global economy and global energy markets

The energy industry is seeing considerable change. High energy prices appear a feature of the past and recovery is likely to be slow and painful. US tight oil is proving to be a disruptive force, and with OPEC stepping back, market forces will now set the price. The implications of this change extend into gas as well where a combination of lower oil prices, its own disruptive shale revolution in the US, and medium-term capacity over-build signals less profitable times ahead. The competitive environment for the industry is highly complex. Conversely, low input prices, better demand and more scarce capital is spelling better times for refining – not quite a golden age but certainly shinier.

In addition, there are longer-wavelength forces at play. The world is actively working towards a lower carbon economy. This trend will be reinforced at the end of this year when the UN holds its COP21 climate change conference in Paris (see discussion below). But in addition, market forces on the demand-side are working their way through. More efficient internal combustion engines are making significant improvements in the oil consumption of traditional modes of transport – hybrids and all-electric cars are increasingly a reality but aeroplanes and ships are also increasingly efficient. Although supply-side competition is most often cited as the reason behind Saudi Arabia's decision not to agree to OPEC supporting oil prices, risks on the demand side will also not have escaped its attention. Costs of renewable electricity generation are falling making, in particular, solar less of a subsidised niche, with implications for natural gas, which historically had been seen as the major beneficiary of the retreat of coal-fired power.

The global economy is still dealing with the aftermath of the financial crisis and economic slump of 2008/09, with many of the legacies of that period still yet to properly unwind. Still, the picture is somewhat encouraging in the advanced economies with economic activity picking up. The acceleration in the US economy appears to be continuing with the prospect of some monetary tightening to reflect this progress. Europe also now appears to be in recovery mode, even with the problems of Greece, benefitting from unprecedented ECB stimulus, low inflation (including the benefits of low oil prices), moderating fiscal austerity and gradually improving credit conditions. A notable feature of the global economy however is the relative strength of developed economies and relative weakness of emerging economies. The slowdown in emerging economies, the growth of which was a major component of commodity strength in recent years, has many underlying reasons, such as tighter external financial conditions, lower commodity prices themselves, geopolitics and the rebalancing of the Chinese economy. Notably in the energy space, the Chinese economy is not the type of dominant consumer as it is for other commodities, but it is still large and has been an important component in overall global demand growth. Hence the Chinese economy's rebalancing and slowdown remains an important influencer.

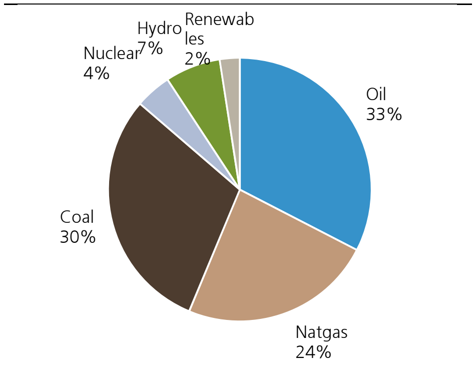
UBS forecasts global GDP growth of 3.2% in 2015, down from 3.5% in 2014, but 3.7% in 2016. Our expectation for long-term GDP is growth is ~3.7%/year over the next five years, declining to ~3.4% thereafter.

Energy use is obviously driven by economic activity albeit that the world economy continues to show increasing efficiency in the manner it uses energy to generate wealth. Emerging markets have routinely been the driver of energy consumption growth because their underlying economic growth rate is higher and that growth is more energy intensive. But if China is an example then they are unlikely to wholly mimic the historical trajectory of industrialising nations in their energy intensity but rather skip generations. Energy intensity of GDP is dropping. Globally we expect 2010-20 oil demand growth to average 1.2%, while we expect LNG demand growth to average 3.8%. The addressable market for the energy sector is not a growth one and indeed may begin to shrink over the medium term especially as plans to mitigate carbon emissions work their way through.

Oil remains the largest provider of energy, followed by coal. Globally around 54% of oil demand is from the transportation sector with around 6% only from power generation. By contrast power generation accounts for ~40% of natural gas consumption[2].

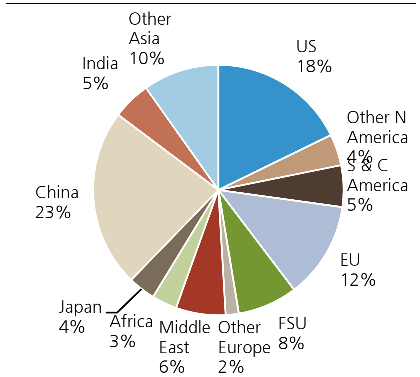
[2] IEA World Energy Outlook 2013

Figure 28: Global primary energy consumption by type



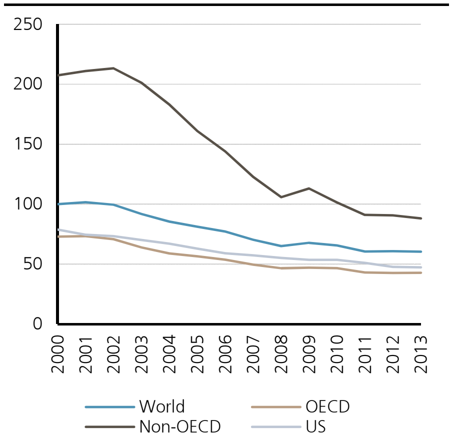
Source: BP Statistical Review 2015

Figure 29: Global primary energy consumption by geography



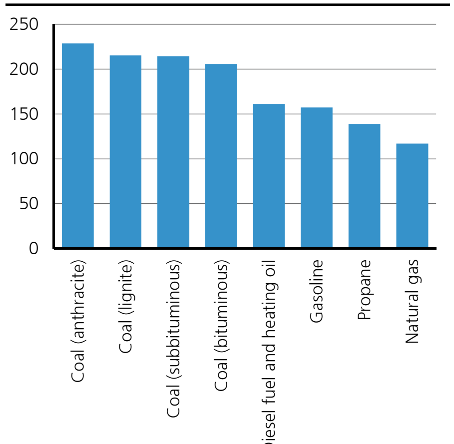
Source: IMF, BP Statistical Review 2015

Figure 30: Global Energy intensity of GDP – indexed (2000=100)



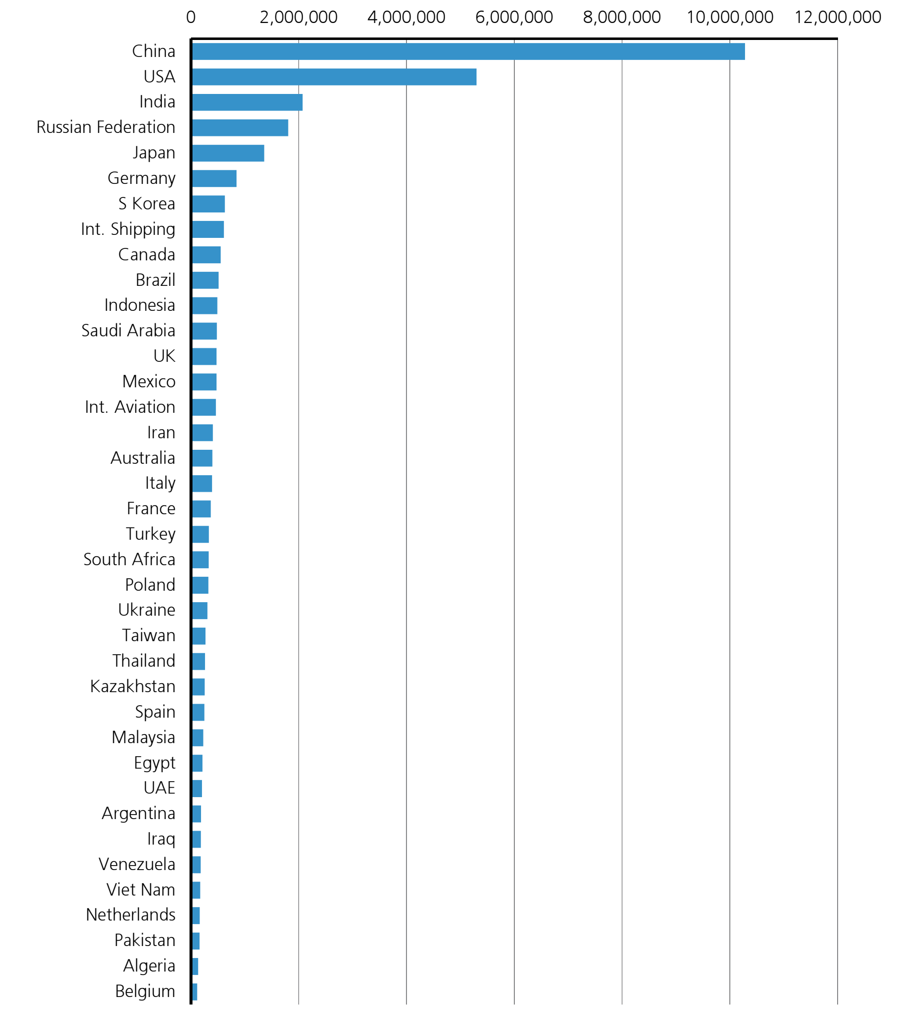
Source: BP Statistical Review 2015

Figure 31: CO2 emitted when burned (lbs/Btu)



Source: EDGAR Joint Research Centre

Figure 32: CO2 emissions by country (tonnes)



Source: EDGAR Joint Research Centre, UBS

Climate change and COP21

In previous Analysers we have briefly raised the issue of climate change initiatives as a continuing issue with respect to how investors should assess the market environment for oil and natural gas. This year, the issue is higher profile because of COP21 being held in Paris towards the end of this year.

The United Nations Framework Convention on Climate Change (UNFCCC) is an international treaty originally negotiated at the Earth Summit in Rio in 1992 with the objective of stabilising greenhouse gas concentrations in the atmosphere at a level to prevent dangerous anthropogenic interference with the climate system. The parties to the convention have met annually since 1995 in Conferences of Parties (COP) to assess progress. The original UNFCCC framework was extended at COP3 in Kyoto in 1997. The Kyoto Protocol, and the commitments made by countries under it, was the first agreed initiative to reduce GHG emissions but it was recognised even at the time as insufficient to stabilise atmospheric concentrations; rather it was a first step with further emissions reductions likely to be agreed subsequently. Indeed, since the first UN Conference of Parties in 1995, greenhouse gas emissions have risen by over 25%.

At COP16 in 2010, it was agreed that future global warming should be limited to below +2ºC relative to pre-industrial levels. This is widely believed to be an appropriate level to target in order that the consequences of climate change do not become dangerous. It is estimated that restricting CO2 concentrations to below 450ppm is consistent with that aim. The energy sector accounts for around two-thirds of all global GHG emissions, implying that energy will make the most significant contribution to the required reductions. While energy intensity of the global economy actually declined in 2014, very significant changes in the energy market are going to be needed if any progress towards keeping GHG concentrations under the target are to be achieved. The IEA estimates that within the energy sector, coal generates the largest amount of CO2 emissions at around 44%, oil 36% and natural gas around 20%.

An interesting feature of COP21 is that individual countries present their own plans for reducing GHGs which will then be consolidated into a broader plan to apply from 2020 aimed at capping global average temperature increases. Previous climate change agreements have acknowledged that developed economies have a greater responsibility, having burned fossil fuels for far longer at scale than emerging markets. However, at COP21 all countries have been asked to submit plans and while countries accounting for around two-thirds of GHG emissions have submitted plans (including China), around one-third have not (including India, Brazil and Indonesia).

While this sounds encouraging, in reality the challenge is immense if the climate science is correct. The IEA, in its 2014 World Energy Outlook, took into account the announced government initiatives into its 'New Policies Scenario'. As we indicate in our discussion of various forecasting bodies' outlooks the IEA New Policies Scenario sees the oil market in 2030 at 104.8Mbd (CAGR over 2015 of ~0.6%), natural gas market growth over the same period of 1.1% and coal 0.4%. However, even this slowdown would not be enough to achieve the targets: indeed this trend is consistent with a GHG concentration of 700ppm of CO2 equivalent by 2100 and a rise in long-term temperatures of +3.6ºC when compared with pre-industrial levels. The IEA's 450 Scenario consistent with the +2ºC target would see the oil market broadly flat in 2020 versus 2015 and declining by ~3% per annum in the next decade. Natural gas would continue to grow in use between 2020 and 2030 but only by around 1% per annum, while coal would see a decline in use over that decade and its use would need to be 30% lower in the 450 Scenario by 2030 than in the New Policies scenario. Given these sobering challenges we see COP21 as likely a very significant event for the oil and gas industry.

It is also from this implied outlook for reduced hydrocarbon usage that has emerged the concept of unburnable carbon. This is the concept that in order to meet the restricted CO2 levels implied by the policy targets, potentially burnable resources will need to stay unexploited. At present we don't think that the reserves and resources accounted for by the oil and gas industry and certainly those that are implicitly valued by the market are at risk – in general the equity prices are trading below NAV – but there is a clear issue about how investors should scrutinise new investment. Clear thinking about how competitive new investments will be will be critical because hydrocarbons will remain important for the foreseeable future and natural decline requires continued development, but the risk of stranded new investment may begin to emerge as an issue to be considered.

Through the looking glass – four outlooks to 2035

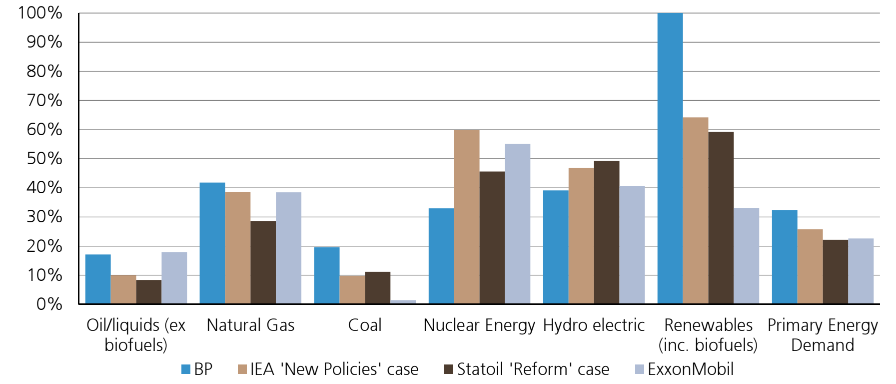
Given the length of the investment cycle for the industry we believe it is a useful exercise to contextualise the current market debates by drawing upon the long-term outlooks published by the IEA, BP, Statoil and ExxonMobil each year. We would highlight the three debates below as central to the longer-term prospects for the industry.

- **Primary energy demand growth is beginning to slow – is this an inflection point for the sector?** The consensus is that energy demand growth is expected to slow towards the end of the next decade. With a decoupling of energy demand and GDP in the OECD world, energy intensity (demand per $GDP) is forecast to fall by 1.9-2.2% p.a, reflecting technological gains, policy impacts, and a structural shift in China away from heavy industry dampening its explosive energy demand (evident in 2014 with the weakest y/y growth since 1998). Yet only Statoil sees energy demand peaking, and even then only in 2035.

- **Are we nearing the end of the oil era?** Oil's share of global energy demand has been in decline since the early 1970's (32.0% last year vs 32.7% in 2010) and this is set to continue, largely due to efficiency improvements and fuel substitution in the transport sector – although penetration of plug-in-hybrids and potential policy reactions to Chinese air quality remain wild cards. The major outlooks diverge somewhat on the fate of oil in absolute terms however, with Statoil seeing a transport demand peak in 2030 (and a wider oil demand peak in 2035) while the IEA sees demand growth decelerating significantly and close to a plateau by 2040. Exxon and BP, however, are significantly more positive on momentum driven by transport demand in the non-OECD world.

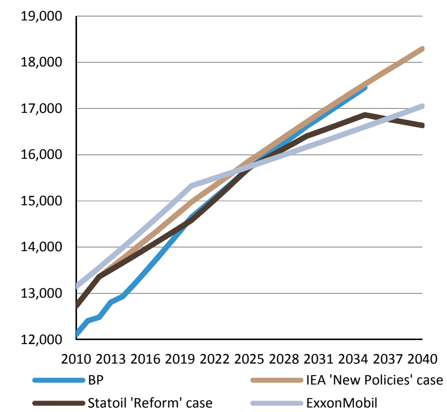
- **How feasible is the IPCC's 2°C plan?** Natgas, nuclear and renewables are all expected to see significant market share gains at coal's expense (some degree of carbon price is assumed). However, while all of the major outlook scenarios assume significant gains from lower energy intensity and growth of renewables, none come close to the 20bn tonnes CO2 target demanded by the IPCC's 2°C plan – which will be in focus at December's Paris summit. We concur with the major outlooks and expect the medium-term casualty of the debate about "stranded assets" is more likely to be coal than oil or natural gas.

Figure 33: 2015-35 primary energy demand growth by source



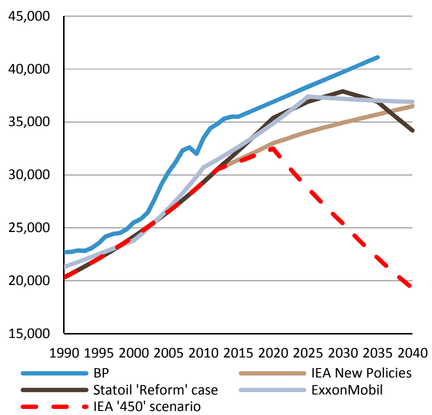
Source: BP 2015 Stat Review, BP Energy Outlook 2035, IEA 2014 WEO, Statoil 2015 Energy Perspectives, ExxonMobil 2015 Outlook for Energy. Note: Statoil/Exxon figures interpolated. BP 2015-35 renewables growth is 216% and exaggerated vs other forecasts by thermal efficiency assumption for Mtoe conversion

Figure 34: Primary energy demand (Mtoe per annum)



Source: BP, IEA, Exxon, Statoil

Figure 35: CO2 emissions (million tonnes) – global forecasts vs IEA '450' scenario/ IPCC 2°C target



Source: BP, IEA, Exxon, Statoil

Global Oil Markets

Overview – slow adjustment process to continue into 2016/17

Figure 36: UBS oil price forecasts vs strip, consensus and prior forecasts

	2014	1Q15	2Q15	3Q15	4Q15	2015	1Q16	2Q16	3Q15	4Q16	2016	2017	2018	2019
Brent ($/bbl)														
UBSe	99.38	55.07	63.40	51.00	50.52	55.00	55.00	55.00	60.00	60.00	57.50	70.00	75.00	80.00
Strip					51.27	55.44	53.44	55.17	56.52	57.84	55.74	60.33	63.03	64.76
Cons				*55.80*	*57.50*		*60.00*	*62.00*			*65.00*	*70.00*	*73.75*	*75.00*
Prior UBS				*62.50*	*65.00*	*61.49*	*67.50*	*70.00*	*70.00*	*72.50*	*70.00*	*80.00*	*90.00*	*90.00*
WTI ($/bbl)														
UBSe	92.89	48.60	57.88	46.00	43.50	48.99	50.00	50.00	55.00	55.00	52.50	65.00	70.00	75.00
Strip					47.18	50.12	48.99	50.28	51.08	52.08	50.61	54.22	57.21	59.09
Cons				*50.50*	*53.25*		*55.00*	*60.00*			*59.88*	*67.00*	*70.00*	*72.50*
Prior UBS				*57.50*	*60.00*	*55.97*	*62.50*	*65.00*	*65.00*	*67.50*	*65.00*	*75.00*	*85.00*	*85.00*

Source: UBS estimates, Bloomberg. Strip and consensus at of 04/09/2015

Our core view on the outlook for the shape of the oil market is unchanged. In the absence of intervention by OPEC, the laws of economics will slowly drive the market along its natural pathway of readjustment: the demand growth outlook is improving as price and wealth impacts work their way through, while the market continues to look tighter from 2016 and beyond as non-OPEC supply sees the impact of another swathe of capex cuts emphasised over 2Q reporting season. That being said, we were somewhat seduced by the rally in oil prices we saw through June and mistakenly raised our shorter-term view only to see prices immediately collapse. While this period of over-supply continues the trading range is likely to be wide and vulnerable to shifts in sentiment. Second-guessing what is 'in' and 'not in' the price during this period is something of a fool's errand. Without a clear price anchor we believe that while the oversupply persists crude will likely trade in a wide range between cash costs of current supply (~$40/bbl before meaningful volumes become at risk of being shut-in) and the long-run marginal cost. August saw some remarkable swings in sentiment driven primarily by concerns over China but also reflected in the strengthening US$, the trajectory of the US production slowdown and the prospect of returning Iranian export volumes. This has given rise to both the lowest level of prices ($42.74/bbl on 24/08/2015), the largest single-day rally (8.2% on 28/08/2015) since 1Q09, and the largest 3-day rally since 1990.

We are lowering our near-term outlook for crude prices significantly in light of the prospect of a lower 3Q outturn and the consequent base from which we see the recovery in prices rising from. We are cutting our 2015/16 Brent and WTI forecasts to $55/57.50 and $49/52.50 respectively ($/bbl, previously $61.50/$70 for Brent and $56/$65 for WTI). In the near term, price recovery will likely be stymied by the continuing production surplus, the prospects of returning Iranian crude, likely tightening in the US, and China slowdown. Only as the supply-side effects begin to feed through will marginal costs become more important, leading to a quickening of the pace of price inflation and normalisation. The exact timing of this effect is somewhat uncertain because it will depend upon the datapoints the market chooses to latch upon – even now the direction of travel is clear with short-cycle US production rolling over and significant capex cuts likely to impact non-OPEC production over the longer-cycle time frame.

We have also revised our S/D balances, now seeing more robust 2015-17 demand than previously forecast, driven by the prolonged downturn in crude pricing. This effect has been particularly pronounced in the OECD, and the absolute demand figure here is aided by a 140kb/d revision to the 1H15 baseline derived from updated IEA data. While we expect that the pace of demand growth will revert back to a little below trend in 2016, the latest data suggests that global oil demand will be up ~1.7Mb/d in FY15 (vs the 1.4Mb/d y/y growth we had previously forecast and a little above the 1.6Mb/d forecast by the IEA in its August MTOMR). We have also cut our 2016-17 non-OPEC supply forecasts by an average of 0.6Mb/d (2015 is unchanged), incorporating the latest round of project deferrals and capex cuts into our outlook, along with the latest productivity data from the US onshore (2016 US supply is cut by 0.5Mb/d and 2017 by 0.3Mb/d, in part reflecting the lower 1H15 baseline following an update to the methodology used in the EIA's 914 data and in part a cut to our rig count assumptions).

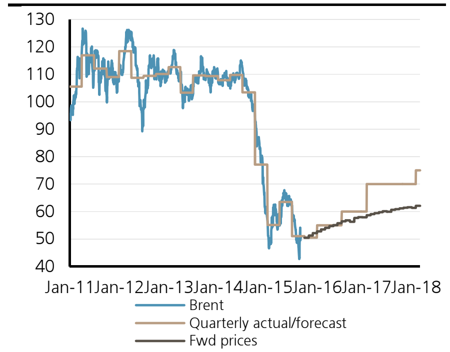
The medium-term outlook is fundamentally unchanged from our view at the outset of 2015: Significant cuts in capex and activity will lead initially to a curtailment in US supply acting to tighten the market. As prices begin to rise again we expect US growth to return, but at that stage a meaningful slowdown in longer-cycle non-OPEC, non-US

supply should act to balance the market. We have cut our 2018/19 non-US, non-OPEC supply forecasts by ~500kb/d, with the biggest cuts coming in East Asia, Colombia and Norway, where we have seen a number of projects deferred awaiting further cost deflation. Our work on the large project database shows only 1.1Mb/d of new production sanctioned in 2015 to date versus a normal run-rate of ~5mb/d. The absence of any further meaningful FIDs in 2015 and a similar shortfall in progress in project maturation in 2016 – a wholly reasonable expectation – should have profound effects on balances in the 2018-20 period. This is somewhat counterbalanced, however, by 400kb/d and 800kb/d upwards revision to our 2018/19 US supply forecasts, driven by the current pace of efficiency gains and an assumed pick-up in drilling activity as the oil price begins to recover. While the latest US production data is beginning to show m/m declines, confirming the shorter-cycle response times of the US onshore to investment decisions, this feature is expected to work in the opposite direction as crude prices recover, with our forecast tick-up in the rig count amplified by further efficiency gains as the industry is still forced to innovate to survive through the downturn.

In the long term the market needs to continue to incentivise sufficient new supply which will require a pick-up in activity in non-US/non-OPEC and indeed OPEC: We continue to expect the marginal barrel to be in non-US/non-OPEC. We have lowered our estimate of the marginal-cost driven long-term Brent price to $80/bbl from $90/bbl, however. This is driven by two trends that have now become clear enough to incorporate into our forecasts. Firstly, it is evident from the impressive efficiency gains seen in 2015 to date that the productive capacity of economic US shale is significantly larger than we had previously forecast, pushing the supply curve to the right (we see the US adding 2.4 Mb/d over 2014-20 vs 1.6 Mb/d previously based on our play-by-play rig count model that we have now rolled over to the longer-term outlook). Secondly, cost reduction and deflation continues to work its way through the upstream and while some of this is cyclical pressure on the service industry, there is growing evidence that operators are implementing structural change. We would emphasise that this is not a 'gimme'. To sustain at $80/bbl likely requires the industry to sustain structural cost reduction of up to 40% in development capex versus the level of unit capex intensity seen in 2014.

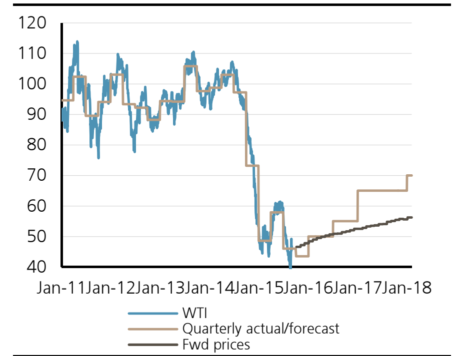
While our forecast is above the curve in out years it is below current consensus and well within confidence intervals implied by current options markets.

Figure 37: 1 month Brent, forward prices and UBSe ($/bbl)



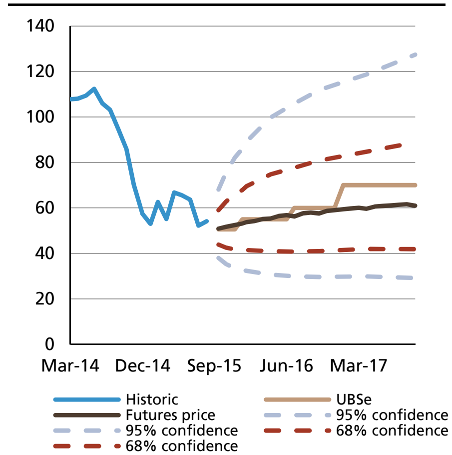
Source: UBS, Bloomberg

Figure 38: 1 month WTI, forward prices and UBSe ($/bbl)



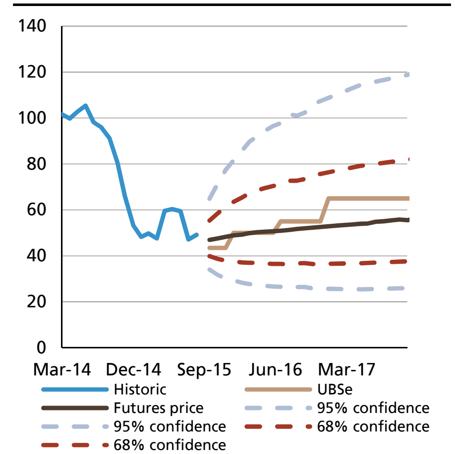
Source: UBS, Bloomberg.

Figure 39: Brent ($/bbl) and options market implied confidence intervals



Source: UBS, Bloomberg

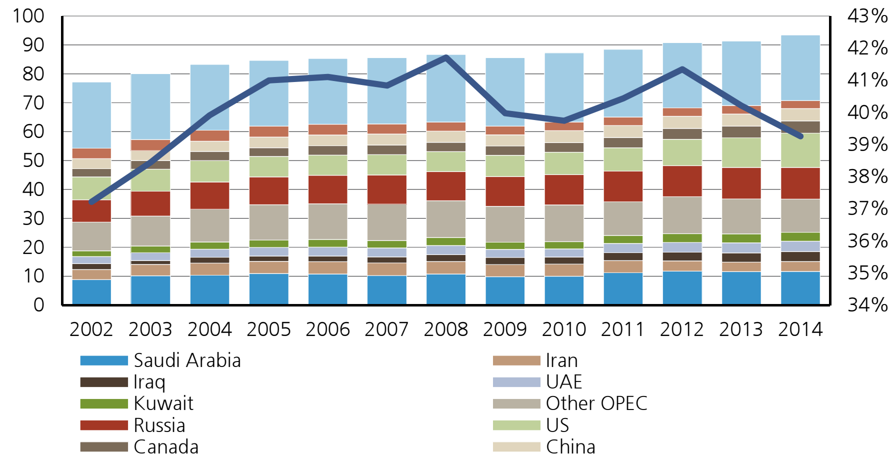
Figure 40: WTI ($/bbl) and options market implied confidence intervals



Source: UBS, Bloomberg

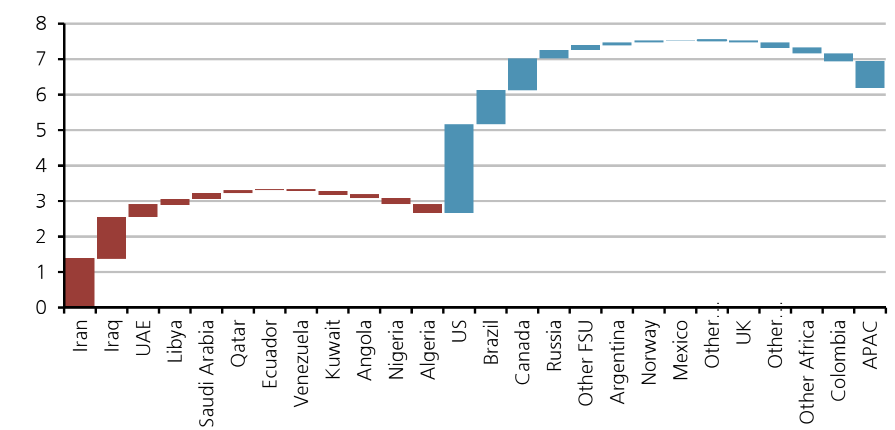
Supply and demand in pictures

Figure 41: Oil production by country (LHS, Mb/d) and OPEC market share (RHS)



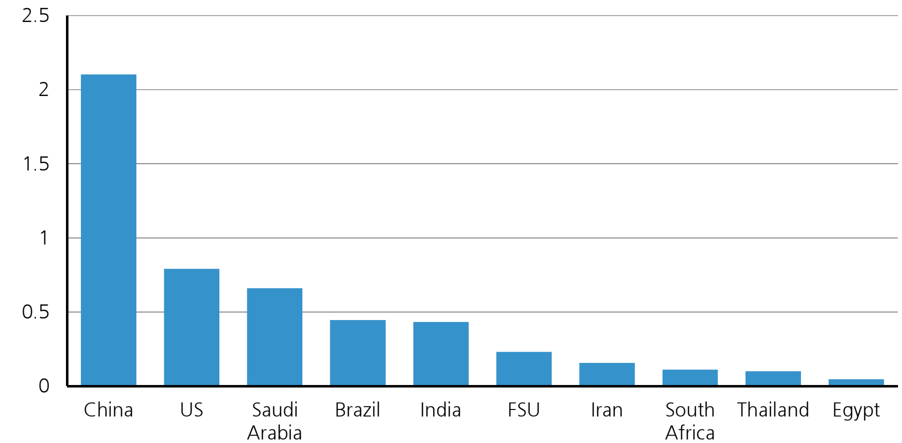
Source: IEA, EIA, UBS

Figure 42: Supply capacity growth by country 2014-20 (Mb/d)



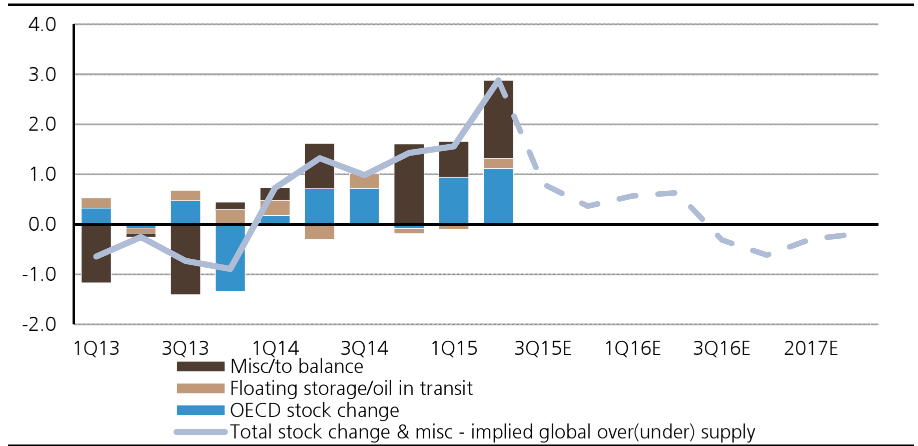
Source: IEA, WoodMackenzie, UBS. Refers to total liquids production capacity (i.e. including NGLs)

Figure 43: Oil demand growth by country 2014-20 (Mb/d)



Source: IEA, EIA, UBS

Figure 44: S/D balance and implied stock change (Mb/d) if OPEC produces at 31Mb/d

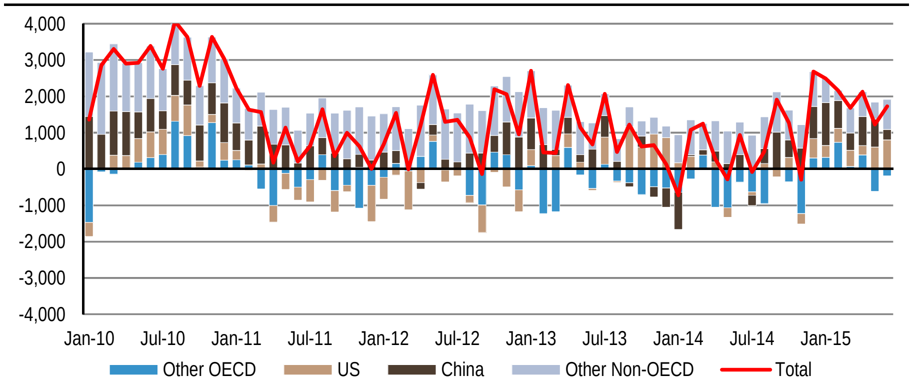


Source: IEA, UBS

Demand

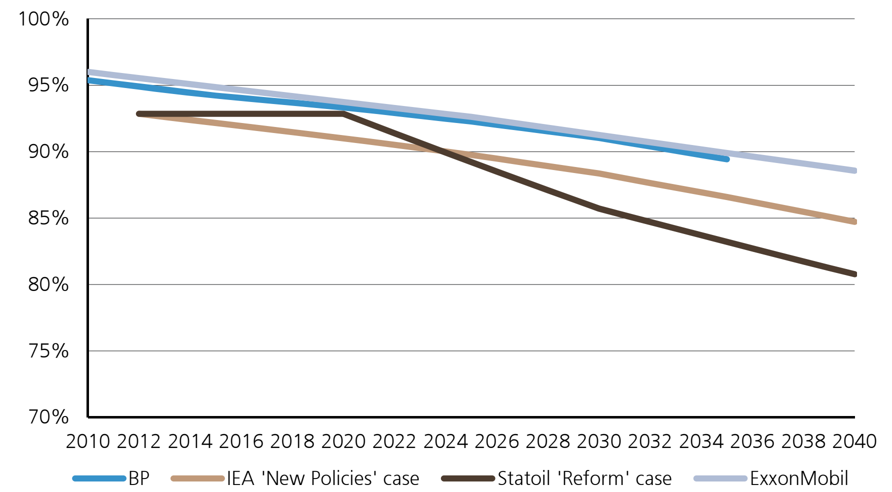
2015 to date has seen a dramatic resurgence in oil demand after the sluggish 2014 that (in part) brought about the present market imbalance: 1H15 demand is running at +1.9Mb/d y/y, well above trend of ~+1.1-1.3Mb/d with the difference driven primarily by the OECD. This has been due to a combination of price effects and wealth effects associated with the lower oil price, we believe, also aided by a cold European winter. We see FY15 growth at 1.7Mb/d as some of the most dramatic price effects fade with the end of the US driving season and the y/y base for comparison becomes more challenging. We would highlight that demand estimates have been gradually moving up this year on a threefold combination of a more prolonged oil price downturn; some key economies surprising on the upside (although recent weeks have raised some serious questions around Chinese demand); and a gradual process of upward revisions to the historical demand base. The IEA for example has allocated 0.4Mb/d of the original 'missing barrels' in its 'miscellaneous/to balance' inventory reconciliation to 1Q15 demand since its initial estimate in May, and the persistence of large balancing terms hints at upside to initial 2Q estimates. On a higher level, global oil demand continues to be dominated by the transport sector, which represents ~55% of end-market consumption – although the growing penetration of plug-in hybrids and full electric vehicles is beginning to threaten this stalwart of demand.

Figure 45: Global oil demand growth by region y/y



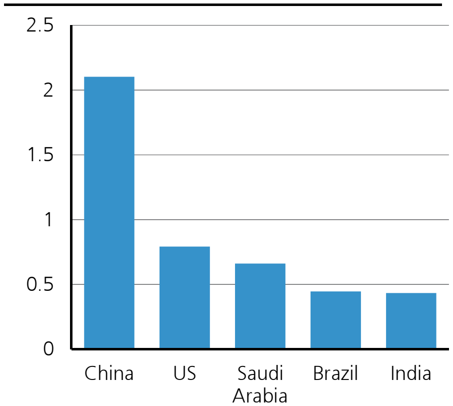
Source: UBS, IEA, EIA, National Statistics Agencies

Figure 46: Energy demand from the transport sector – oil's market share



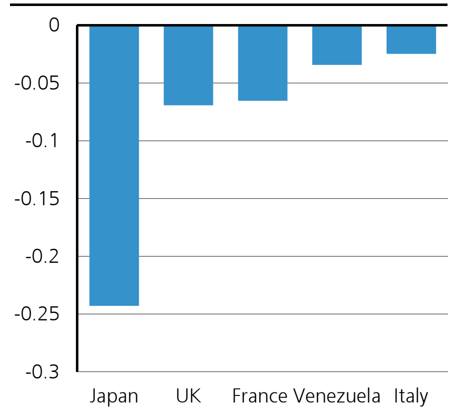
Source: BP statistical review, IEA World Energy Outlook, Statoil Energy Perspectives, ExxonMobil Outlook for Energy

Figure 47: 5 largest sources of 2014-20 demand growth (cumulative Mb/d)



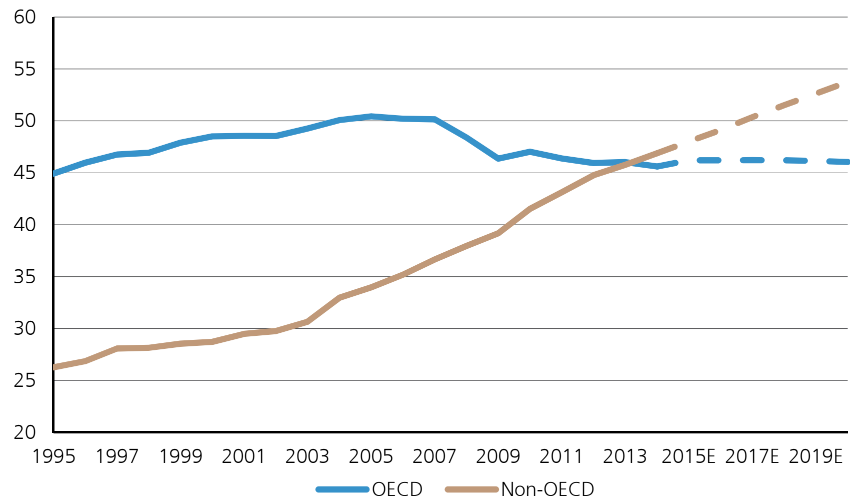
Source: UBS

Figure 48: 5 largest sources of 2014-20 demand decline (cumulative Mb/d)



Source: UBS

Figure 49: OECD vs non-OECD demand (Mb/d)



Source: IEA, UBS

OECD demand

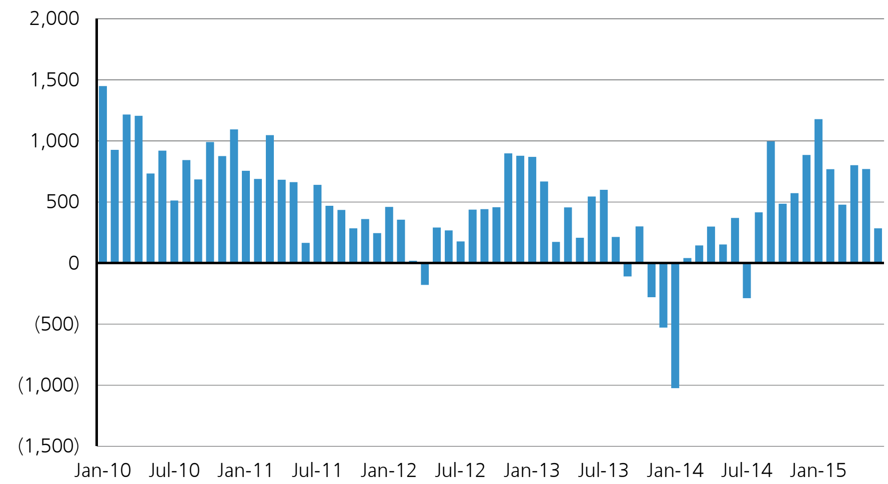
OECD demand has been falling since 2006, declining at 0.6 Mb/d per annum over 2006-12, although a significant proportion of this is attributable to the 2008-09 global economic crisis. While 2014 demand was weak (-0.4Mb/d y/y), 2015 has seen a significant resurgence and we expect a FY out-turn of +0.6Mb/d vs 2014. This dramatic reversal has been driven by the US, highly geared to lower pump prices (US gasoline demand is running up ~6% y/y on a bumper summer driving season with YTD miles driven +3.5%), and in 1Q Europe that saw weather normalise and economic activity pick up. Post 2015 we expect OECD demand to be flattish and then eventually returning to structural decline of ~0.1Mb/d. We expect GDP and oil demand in the OECD to continue to de-link, although the ongoing gains in fuel efficiency and diversification of the energy mix are offset somewhat by the prospect of lower prices in the medium term, which is threatening fuel-switching initiatives.

Non-OECD demand

With the oil-price driven resurgence in OECD demand in 2015 not forecast to be repeated in 2016, we see the non-OECD world continuing to drive global oil demand growth in the longer term. Over 2015-20 we see non-OECD demand growing at ~1.1Mb/d, a little below the recent trend.

Instrumental behind this is the changing mix of China's economy, which accounts for a deceleration in demand growth from the recent trend of 5.4% per annum to a CAGR of 2.8% over the remainder of the decade. While 2015 y/y growth should be strong due to the 1H15 outturn (demand is running +7% in 2015 to date), we expect demand growth to slow considerably for the rest of the year – due to both slowing industrial activity but also a more challenging y/y base for comparison. UBS' view is that this slowdown is real, but that recent stock market gyrations, which have clearly worried investors as to the health of the real economy, are not a lead indicator of something worse to come.

Figure 50: China y/y oil demand growth (kb/d)



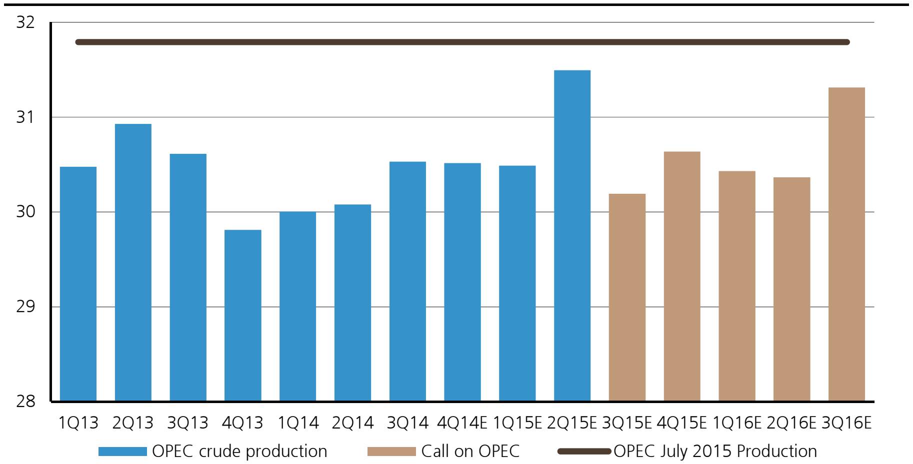
Source: Xinhua News Agency, Reuters, UBS

Supply

OPEC supply

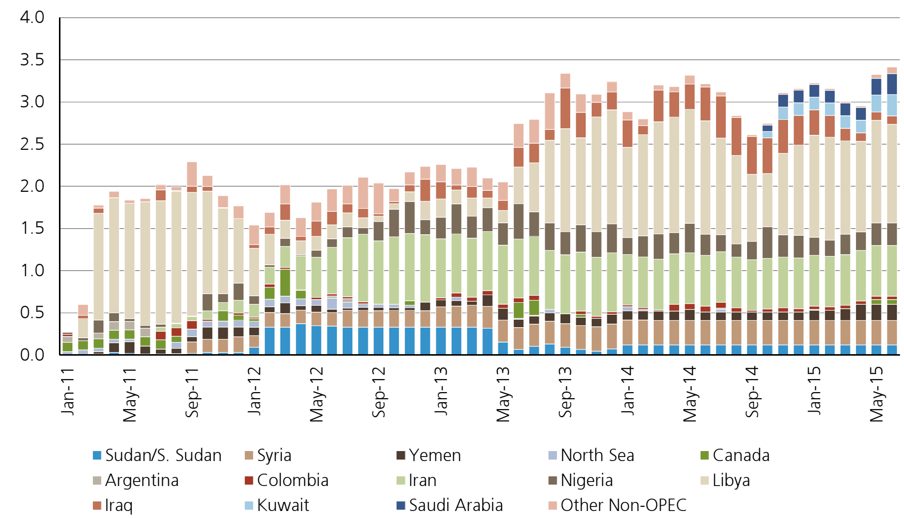
2014-15 has marked a paradigm shift for OPEC. The November 2014 meeting is routinely described as the watershed moment at which OPEC *decided* to change policy from one of defending price to one of defending market share. We are less convinced by this narrative, however. As 2015 plays out it is becoming more and more apparent that this was not a cohesive cartel decision, rather a meeting where Saudi Arabia shifted its own position (in conjunction with the Gulf Cooperation Council, albeit with less than enthusiastic support), and hence agreement on a cut in production could not be reached. While a number of producers are feeling the pain of lower oil prices and have called for an emergency meeting, we believe that a lack of unanimity renders OPEC's cartel effectively powerless for the time being. OPEC members now appear to be maximising production – a logical response to having become price-takers. OPEC production has averaged 31.1Mb/d in the first 7 months of 2015, significantly above the official 30Mb/d target (which we now view as largely meaningless).

Figure 51: OPEC crude output vs call on OPEC (Mb/d)



Source: IEA, UBS

Figure 52: Global supply outages (Mb/d)



Source: UBS, EIA

Unplanned disruptions remain elevated vs historical levels driven by continued geopolitical uncertainty in the MENA OPEC producers – OPEC outages are currently running at 2.65Mb/d, ~1Mb/d above the 2014-15 average and driven primarily by Libya and Iran but supplemented in recent months by the shut-in of ~500kb/d production from the Saudi-Kuwaiti partitioned zone following a series of disputes here.

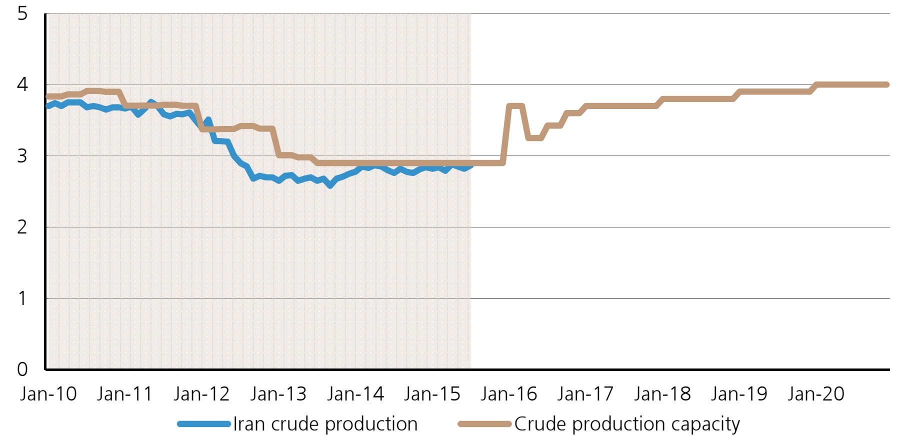
The remainder of the decade sees, in our opinion, four significant uncertainties around the profile of OPEC output. The first, and perhaps most fundamental, is the question alluded to above of the cartel's continued relevance in a world in which it no longer represents the sole source of short-cycle supply additions, given the lead times in the US onshore. Ever-present in the calculations of Saudi will now be the consideration that any shut-in of existing capacity may provide just a few months' price respite before the available market share is filled by competitors, whether overseas in the form of the US or local in the form of growing spare capacity in Iraq and Iran.

The second of these uncertainties is clearly Iran. After almost two years of negotiations, the Iran and the P5+1 signed an agreement in July that, if approved by all parties, could see an easing of nuclear-related sanctions. The agreement calls for Iran to reduce its enriched uranium stockpile by 98%, export all waste for 15 years, reduce the number of centrifuges used to enrich uranium by two-thirds, allow inspector access at nuclear sites (including military sites) and redesign the Arak heavy water reactor. In exchange, the US/EU/UN will not introduce new sanctions and may, in time, reduce sanctions on certain industries, including the oil, gas and petrochemical sectors. All sanctions against Iran related to alleged human rights abuses, missiles, and support for terrorism are not affected by the agreement and will remain in place, however.

The US congress has until 17 September to approve or reject the deal, although with the Iran deal the signature piece of Obama foreign policy, a rejection will require two-thirds support in both houses to override a presidential veto. At the time of writing, there appears to be sufficient support for the administration to avoid this. Even if the deal is approved by the US, it faces a number of hurdles before "implementation day" and the start of sanctions relief: the International Atomic Energy Agency is currently investigating any past or present military dimensions to the country's nuclear programme, and will issue a report on this by 15 December. Any sanctions relief remains contingent on IAEA verification that Iran is complying with the terms of the deal outlined above.

Iran represents OPEC's third-largest producer and the world's fourth-largest reserve holder, but production has declined to ~2.8Mb/d since the introduction of strict financial sanctions in 2012 (that saw exports fall from ~2.2Mb/d to around 1.1Mb/d currently, slightly above the 1Mb/d nominal cap agreed under the November 2013 preliminary deal). The IEA sees Iran's sustainable production capacity (i.e. the level to which crude production could return within 90 days in an unconstrained environment) at 3.6Mb/d and Iran's oil minister has stated that he expects the country to increase output by ~500kb/d immediately on any lifting of sanctions, and by 1Mb/d "within months." There is also ~46Mb (mostly condensate) in floating storage that Iran could quickly release onto international markets in the event that sanctions are lifted. Other sources are more bearish, however, with WoodMackenzie projecting a more modest 600kb/d by end-2017. We assume that capacity returns to the pre-sanctions level of ~3.6Mb/d over the course of 2016, but are cautious around the longer-term outlook – growing capacity further will require meaningful investment of foreign capital. This in turn is likely to be contingent on contract reform – the pre-sanctions era buyback contracts provided infamously poor returns for the IOCs, and in an era of lower oil prices and scarce upstream capital Iran will need to offer more attractive commercial terms (the new 'integrated petroleum contract' will reportedly function more like the Iraqi service contracts and is due to be unveiled in December). Iran's maximum annual production rate was recorded in 1974 at 6.06Mb/d, and was last above 4Mb/d in 2011.

Figure 53: Iran crude production vs sustainable production capacity (Mb/d



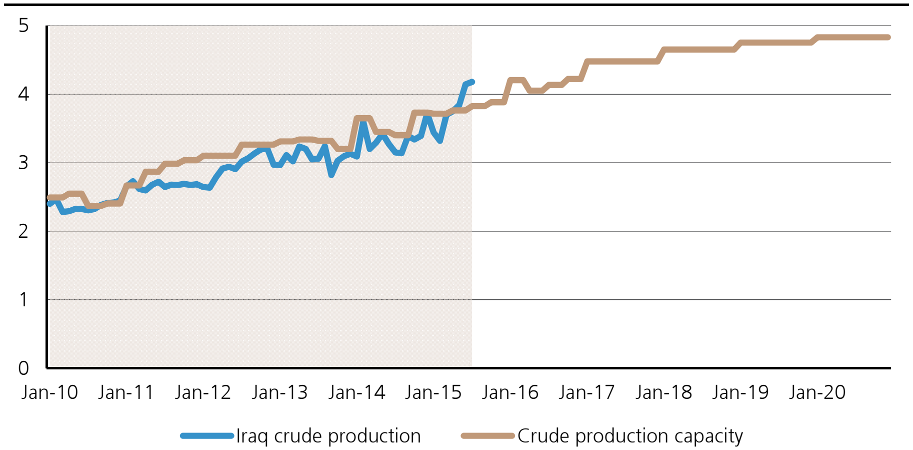
Source: IEA, UBS, WoodMackenzie

Iraq represents the second greatest source of potential OPEC capacity growth to 2020: we project an increase in production capacity of ~0.5Mb/d from the current record output levels across the balance of the decade. Iraq's large eastern and southern oilfields have seen somewhat of a resurgence in the last 12 months, driving output to >4Mb/d and aided by the start-up of the new Basra Heavy export stream (freeing up production previously shut-in to improve the quality of the Basra Light stream). However, the situation remains complicated: while these fields are not directly threatened by ISIL the combination of lower oil prices and ongoing conflict represents a drain on Baghdad's resources that could curtail the build-out of new capacity. Several fields (West Qurna One, Rumaila and Majnoon) have already seen 2015 development budgets cut or full-

scale developments delayed, and in the context of a more prolonged oil price weakness there's clearly a risk that projects continue to be deferred. Attempts to revise the current service contract structure (with the oil price risk all on Baghdad) to something more like a PSC are continuing but no concrete outcome has emerged from this yet.

On the other hand we are more optimistic around Kurdish production: the KRG expects to begin paying contractors from September (although meaningful repayments of existing receivables aren't expected until 2016) having switched primarily to independent sales in June. We estimate that the KRG is able to generate ~$650-700m in revenues per month from independent exports, significantly more than it has received in recent months from Baghdad under the revenue-sharing agreement put in place earlier this year and enough to begin covering contractors' ongoing expenses (the KRG needs ~US$600m per month to cover domestic government salaries and bills). While the complex geopolitics likely currently deters investment from the international majors, the prospect of meaningful repayments to contractors as exports ramp up in 2016 is promising for incremental investment and capacity growth through to 2020.

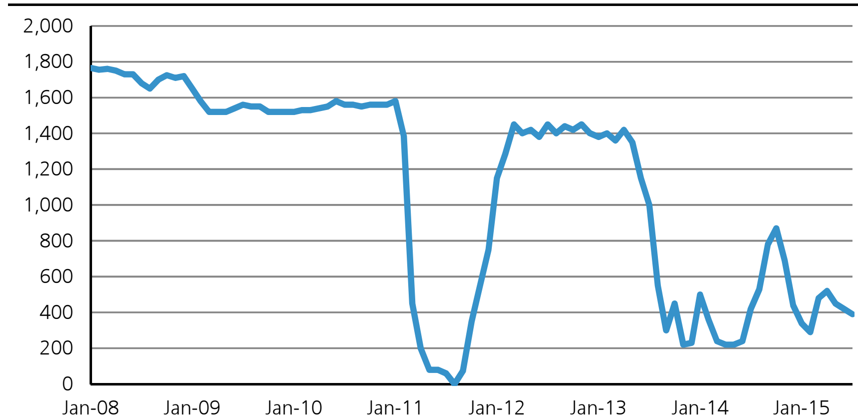
Figure 54: Iraq crude production vs sustainable production capacity (Mb/d



Source: IEA, UBS, WoodMackenzie

Finally, we expect Libyan production to remain volatile. Crude production has averaged just 410kb/d in 2015 to date, down from the recent peak of 870kb/d in October 2014 after output saw a brief resurgence. Production at the key south-western fields of El Feel and El Sharara has since been shut in, however, after pipelines were shut by employment protests and output continues to run well below the Gadaffi-era levels of ~1.6Mb/d. The majority of current output is being produced by the Eni-NOC JV, and while there has been some positive newsflow in recent months with the lifting of force majeure at the Ras Lanuf export terminal, this has yet to materialise in production gains. We assume a gradual normalisation in the security situation and corresponding recovery in output over the remainder of the decade, although we see the lack of recent investment acting as a bottleneck on output and preventing a full recovery to the post-Gadaffi peak of 1.48Mb/d set in 2012. The risks to this view lie largely to the downside – either through a continuation of hostilities or even the implementation of an oil embargo that has been mooted by EU negotiators – which we believe is unlikely (targeted asset freezes and EU travel bans appear to be the preferred options) but would see meaningful volumes shut-in with OECD Europe the importer of over 50% of Libyan crude production. Libyan production maxed out at 1.82Mb/d between 2006 and 2008.

Figure 55: Libyan crude production (kb/d)



Source: IEA, UBS

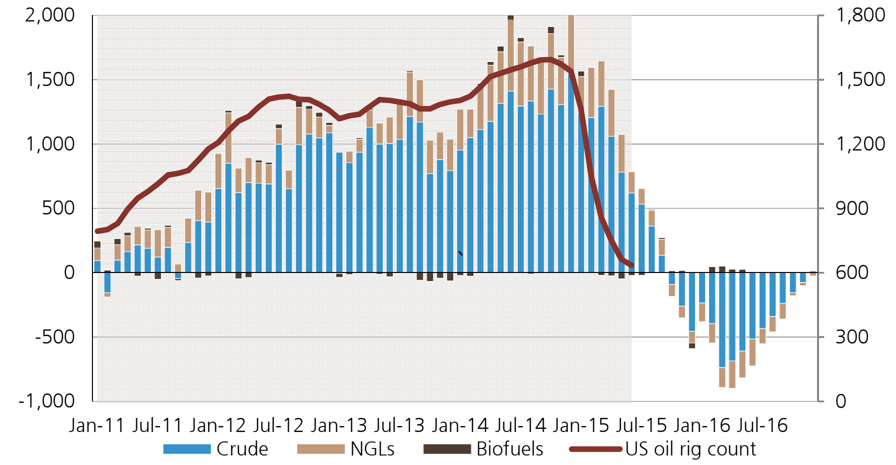
Non-OPEC supply

Total non-OPEC production averaged 58.1Mb/d in 1H15, an impressive 2Mb/d above 1H14 with ~75% of this coming from the US. While this apparently demonstrates remarkable resilience in the face of lower oil prices and swathes of capex cuts, in reality the impact of the fall in activity is likely to be felt in 2H15 and 2016. Even with the shorter-cycle nature of US unconventional production much of the 1H15 increase was already set in train before the decline in oil prices.

We forecast US crude production to increase by 0.5Mb/d in 2015 before declining by 0.4Mb/d in 2016. Our forecast assumes the rig count stabilises at current levels for the balance of the year, before beginning to recover by ~5 rigs per month in the 'Big 4' plays in 2016 – although this implies a FY16 average down 10% on 2015. Our model also assumes efficiency gains continue: we assume that production per rig in the main shale plays increases ~1.5-2.5% m/m through the balance of 2015/16, below the 3-5% m/m gains seen in 2015 to date across the main plays. Recent gains have been boosted by dropping the least productive rigs, moving activity to the 'core of the core' and benefitting from production from previously drilled but uncompleted wells. Longer term we expect industry activity to ramp up as the oil price gradually recovers and see efficiency gains moderating towards historical averages of 1-1.5% in 2017 and then flat in out years.

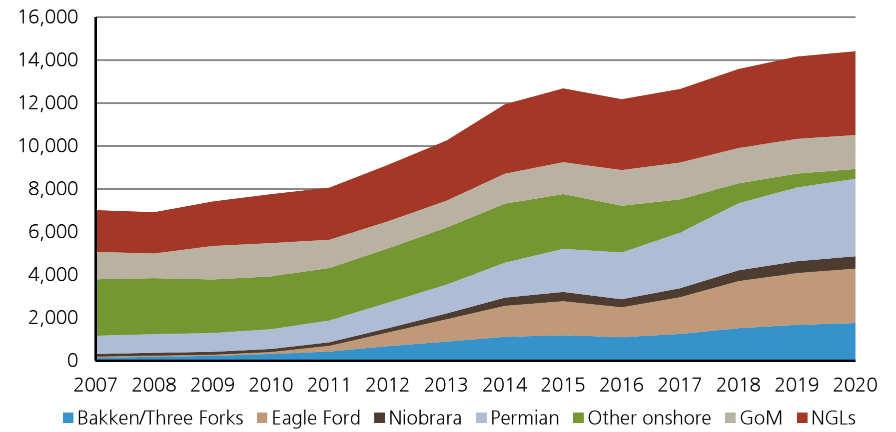
Outside of the US we see the effect of lower oil prices now beginning to have a significant impact on the longer-term production outlook. Lower oil prices are forcing operators to re-examine investment levels, and 2015 to date has seen a meaningful trend of capex budget cuts. Some of this has come from the impact of cyclical deflation in the upstream and deep cuts to exploration spend, but a significant proportion is coming from project deferrals. We expect that when 2015 is complete the number of major project sanctions will be in single figures as operators look to re-work projects to take advantage of further deflation coming through the supply chain (a phenomenon discussed at greater length in a later chapter on the oilfield service cost environment). We expect non-OPEC, non-US supply to grow by an average of 0.3Mb/d p.a. through to 2020, with the bulk of this coming from Brazil, Canada and Russia where significant developments are already underway, although this should tail off towards the end of the decade as the impact of project deferrals is felt fully only from 2018.

Figure 56: US liquids production y/y growth (kb/d, LHS) vs US oil rig count (RHS)



Source: EIA, Baker Hughes, UBS estimates

Figure 57: US liquids production by type



Source: EIA, UBS estimates

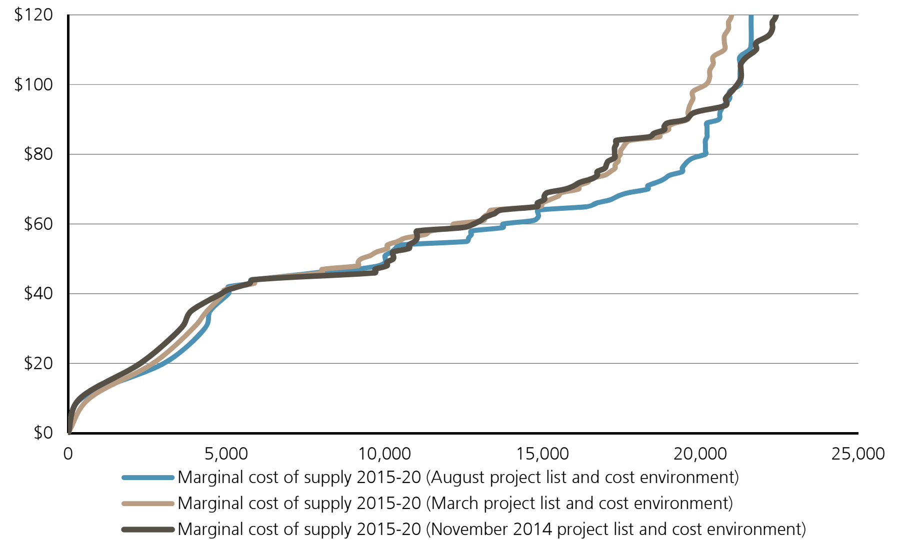
Long-term oil price – marginal cost rules

We have cut our forecast for long-term oil prices to $80/bbl from $90/bbl previously (and vs $100/bbl at this time last year, which explicitly incorporated OPEC price support). Our long-term price forecast is based on our view of the price required to generate an acceptable rate of return for the marginal barrel, adjusted for a project risk element. While industry cash costs of production likely lie at $40/bbl and lower, as the market goes through the rebalancing process it needs to appropriately incentivise new capacity. This process is quicker than often understood because while oil demand grows only slowly (~1% per year) unmitigated decline of existing capacity is around 8-10% per annum (mitigated decline 3-5%).

Throughout 1H15 we have begun to see considerable cost deflation working its way through the industry. There is some doubt around the longevity of this since a significant proportion is attributable to margin pressure on the oil service sector, some of which, ultimately, probably isn't sustainable, especially in a recovering price scenario. That said, in the conventional oil production space it's clear that over the last cycle the industry cost increase is only partly about direct costs from suppliers: a significant proportion of the rise in unit lifting costs (up 52% over 2010-14 for GlobalOilco) and F&D costs (up 28% over 2010-14) has been due to a deterioration in the efficiency of the industry in developing reserves. Some of this is due to the greater complexity of resource, but some complexity has been introduced by the industry itself and it is here where we believe we have seen sufficient evidence of progress to justify lowering our normalised oil price assumption.

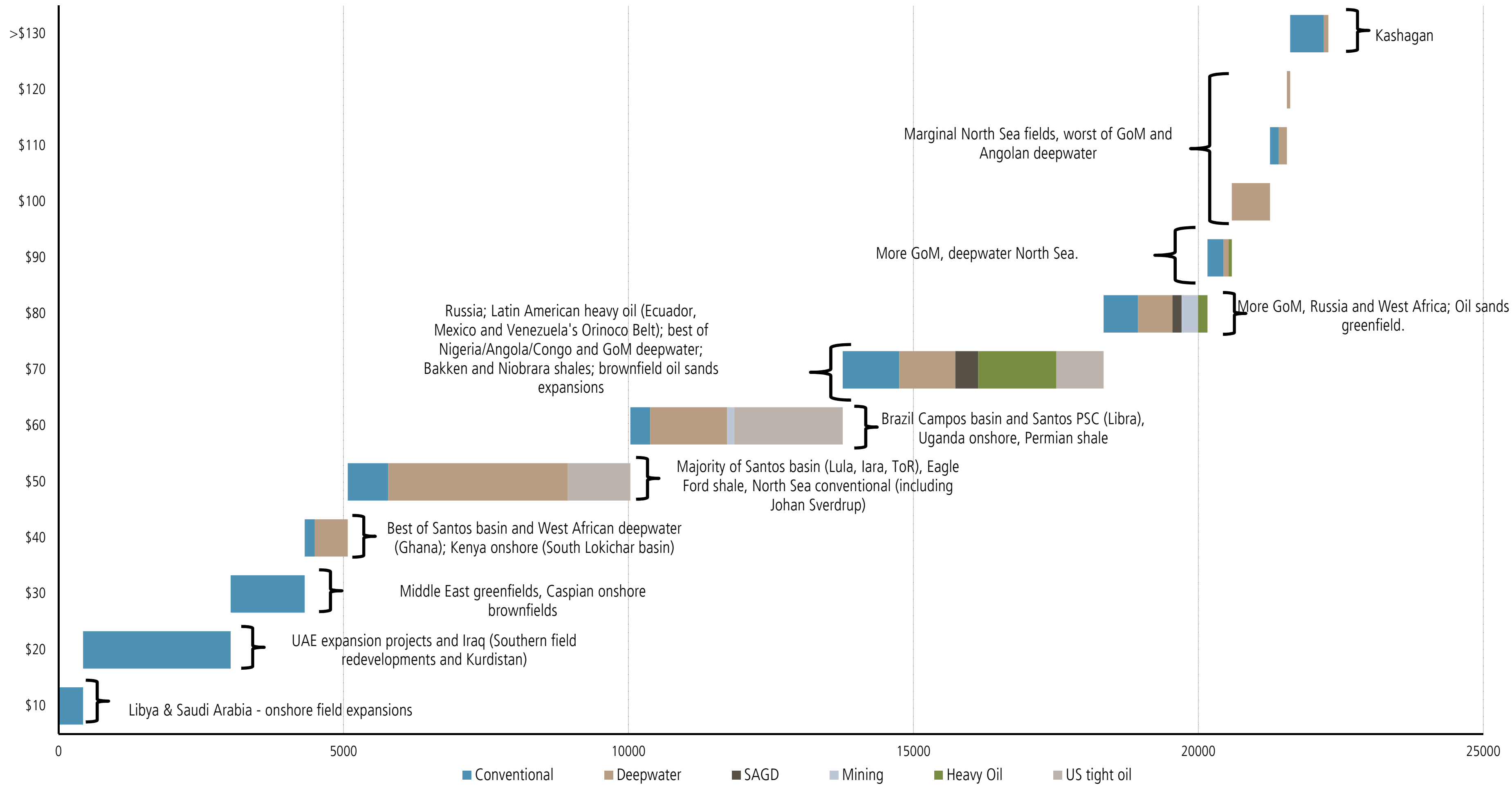
We calculate that 87% of identifiable major projects coming on stream over 2015-20 generate a risk-adjusted rate of return at $75/bbl. This compares to 80% of projects in the March 2015 cost environment, and 73% of all projects in November 2014 (we note that the latter dataset includes a tail end of high-cost West African deepwater that has since disappeared from the Majors' pre-2020 project pipelines). This demonstrates the first impact of oil prices on supply: whereby lower prices drive a wave of deferrals of higher-cost projects (causing a contraction at the tail-end of the marginal cost curve and the ~2Mboe/d of 'missing barrels' we identified in March this year). As the market adjusts during a sustained period of oversupply the pressure on operators to bring down upstream costs triggers the re-evaluation of development concepts and cost improvements that ultimately ought to be structural, at least in part. Part of this is an unwinding of less efficient behaviour encouraged by higher oil prices and part a necessary periodic re-evaluation of processes.

Figure 58: Marginal cost of new oil supply 2015-20 ($/bbl Brent) - evolution



Source: UBS, WoodMackenzie

Figure 59: Marginal cost of new oil supply 2015-20 (cumulative kb/d new production)



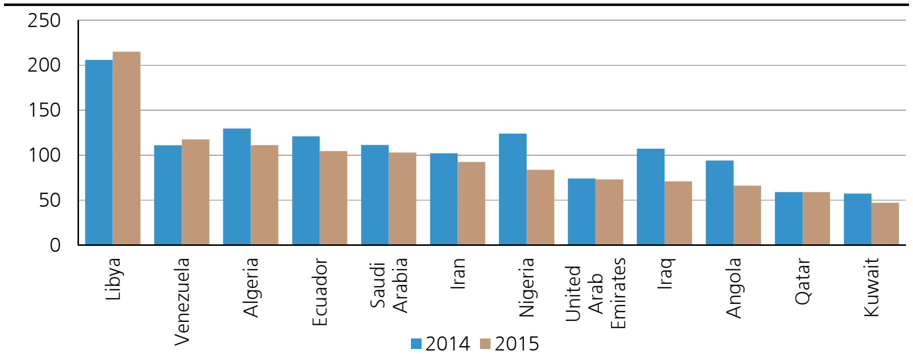
Source: UBS, WoodMackenzie. Note: Included identified major projects with a material liquids component only (UBS' upstream database tracks identifiable projects at around the 100kboe/d level or larger as a means of sampling key project trends). 'Marginal cost' defined as Brent oil price required to generate full-cycle IRR of 10% for oil sands projects, 12% for conventional offshore and onshore projects, and 15% for deepwater projects.

The OPEC quota – no longer relevant?

Prior to OPEC's inability to agree to cut output in November 2014, a closely watched datapoint had been the oil price required for the major producers to balance their domestic spending needs - the logic being that fiscal and trade balances could be used to try and infer a likely price target for the group. These budget requirements had risen dramatically following increased social spending programmes in the wake of the Arab Spring, although we suspect the direction of causality has been from rising oil prices to budget inflation rather than the reverse (similar to a trend we had seen right across the industry). This analysis is rendered irrelevant in the near term since budgets are set with the knowledge that they will be in deficit given price expectations and inflexibility in short-term spending – although it does remain an interesting test of financial stress.

We also note that the vast majority of OPEC producers have now begun implementing new fiscal measures in response to widening budget deficits under lower oil prices – an interesting parallel to the efforts by the major IOCs to 'reset' the cost base to a lower-oil-price world. In many cases the first victims of these budget cuts have been long-running domestic subsidies for oil products. Importantly, however, Saudi is yet to announce any material fiscal tightening, preferring instead to tap capital markets to address the cash shortfall in the near term.

Figure 60: OPEC fiscal breakeven ($/bbl Brent)



Source: IMF (MENA producers), Wall Street Journal (Venezuela), UBS (Angola, Nigeria, Ecuador)

Figure 61: Summary of OPEC fiscal/monetary responses to lower oil prices

Country	Announced fiscal measures
Algeria	Public sector hiring freeze, postponement of infrastructure projects. Ending fuel subsidy currently "not on the agenda.
Angola	Removed domestic fuel subsidies in April – gasoline prices increased 28% over 2 weeks in Luanda.
Ecuador	2015 budget cut by $1.4bn in January and then a further $0.8bn in August in light of lower oil prices. 2016 budget to include a reference price of $40/bbl and deficit of 2-2.5% of GDP (compared to 5% in 2015). Budget expected to be approved in November.
Iran	Gradual depreciation of currency peg in line with inflation.
Iraq	2015 budget increased non-oil taxes, oil ministry has requested development spending cuts at major oilfields and is considering reforming current service contracts.
Kuwait	2015/16 budget includes an 18% cut in public sector spending.
Libya	No major policy response announced – unsurprising given lack of united central government.
Nigeria	Major reform of NNPC and new CEO has a mandate to improve oil revenue collection.
Qatar	No major policy response announced – budget frozen at 2014 levels although in recent years actual expenditure has run significantly above target.
Saudi Arabia	Large fiscal spending package worth ~4% of GDP announced in February 2015 following leadership change. Intention to issue $27bn in bonds by year-end, July saw first sovereign issuance since 2007.
UAE	Removed fuel subsidies worth ~$7bn per annum at the start of August.
Venezuela	Printing bolivares to cover widening budget gap – reports of domestic inflation running >100%.

Source: UBS, IMF, Bloomberg, Reuters, Wall Street Journal

Furthermore, in the longer term we are sceptical about OPEC's willingness and capacity to reduce output: and we do not expect significant cuts in its 30Mb/d quota (or indeed the individual quota-busting levels of production). We believe that Saudi Arabia is likely satisfied with how its initiative is progressing and will be willing to allow the market to rebalance naturally. Any reinstatement of OPEC price control would likely place the burden on Saudi Arabia, with other non-GCC producers largely expecting to be carried, while it would persuade non-OPEC producers that the risk of lower for longer was not a material risk to investment planning.

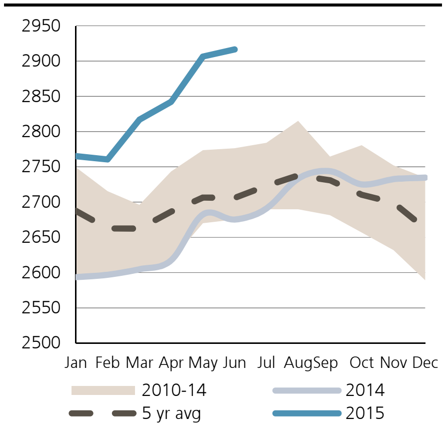
Industry Stocks

OECD

OECD stocks increased by 187Mb in 1H15 (crude 124Mb, products 45Mb, NGLs/feedstock/other 18Mb), following a 140Mb build in 2014 as the global market remains significantly oversupplied. The US has been responsible for the vast majority of this (total stocks are up 114Mb YTD and crude stocks are up 77Mb).

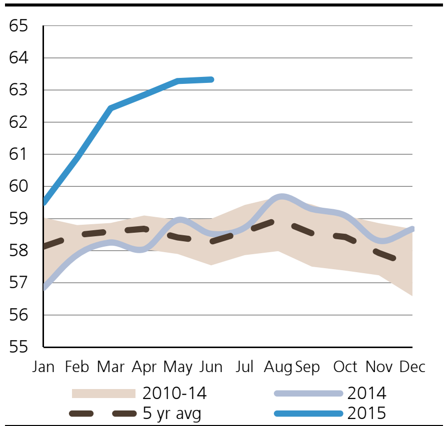
Clearly the main driver of this has been the loose global oil market, although we would note that unusual inventory builds have been confined to crude stocks – robust product demand (on the price effect, particularly in the US) has kept OECD refined product inventories within their 5-year range – product inventories are currently running 56Mb above the seasonal average and are up 106Mb y/y, but remain below 2009/10 levels. Crude inventories by contrast were 148Mb above the seasonal average at end-June and are up 134Mb y/y as production has continued to show resilience despite lower oil prices and the numerous capex cuts.

Figure 62: OECD total commercial inventories (Mbbls)



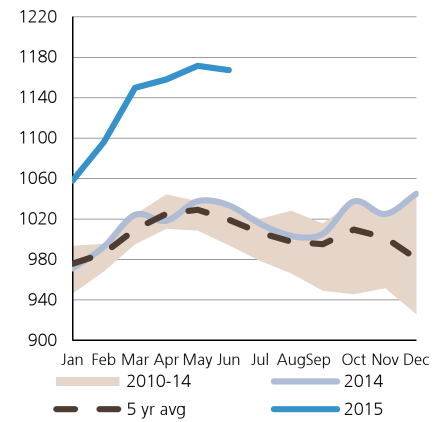
Source: IEA, UBS

Figure 63: OECD commercial inventories (days of forward demand)



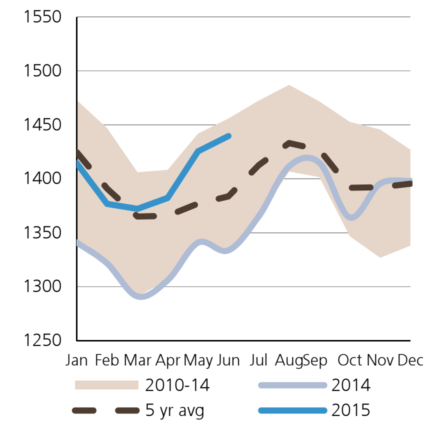
Source: UEA, UBS

Figure 64: OECD commercial crude stocks (Mbbls)



Source: IEA, UBS

Figure 65: OECD commercial refined product stocks (Mbbls)



Source: IEA, UBS

Non-OECD

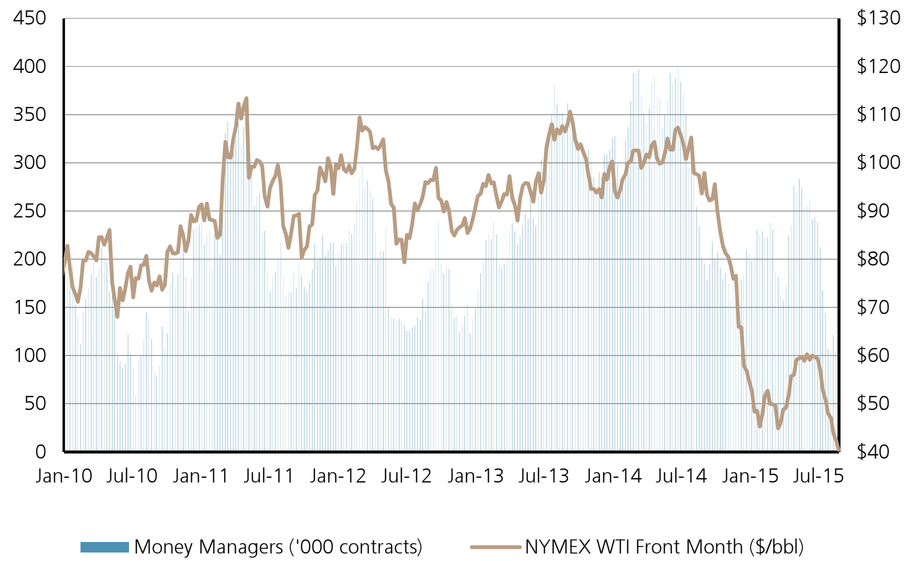
Global supply has been on average 2.4Mb/d above demand throughout 1H15, significantly above the rate at which reported OECD stocks have been building (1.0Mb/d). This on face value implies significant increases in non-OECD and floating inventories, and numerous pieces of anecdotal evidence would appear to support this: Iran reportedly added 6Mb of condensate in floating storage in July (and may well be ramping up fields and adding to onshore storage volumes in anticipation of a potential return to the world market in 2016), while China has reportedly begun filling its 20Mb Qingdao SPR site which opened in June (two further SPR sites at Huizhou and Jinzhou with ~50Mb combined capacity could be commissioned in 2H15). As of end June, reported Chinese crude stocks stood at 235 Mb, 20Mb above the 5-year average. We would caution, however, that 1H15 has seen historical demand estimates revised upwards meaningfully, as the "missing barrels" from the IEA's miscellaneous/to balance item have gradually been revealed to be demand rather than non-OECD stock builds: 0.4Mb/d of 1Q15 stock build has been re-allocated to demand since May's initial estimate, implying some 36Mb of missing barrels have now been "found".

Oil and financial markets

Both legs of the recent collapse in crude prices have been accompanied by the liquidation of a close to record futures position. The combined net long position in WTI futures and options fell from the June peak of 397,693 contracts to a trough of 158,182 ahead of the OPEC meeting in November. While speculative interest built again as crude stabilised and then turned more positive in 2Q15, the recent leg down has seen managed money fleeing crude: net longs have collapsed from 283,459 contracts in May to just 89,035 as of 18 August. The rapid build in speculative interest in crude was likely fuelled in part by the availability of cheap QE money – and there were signs of this at work again in 1H15.

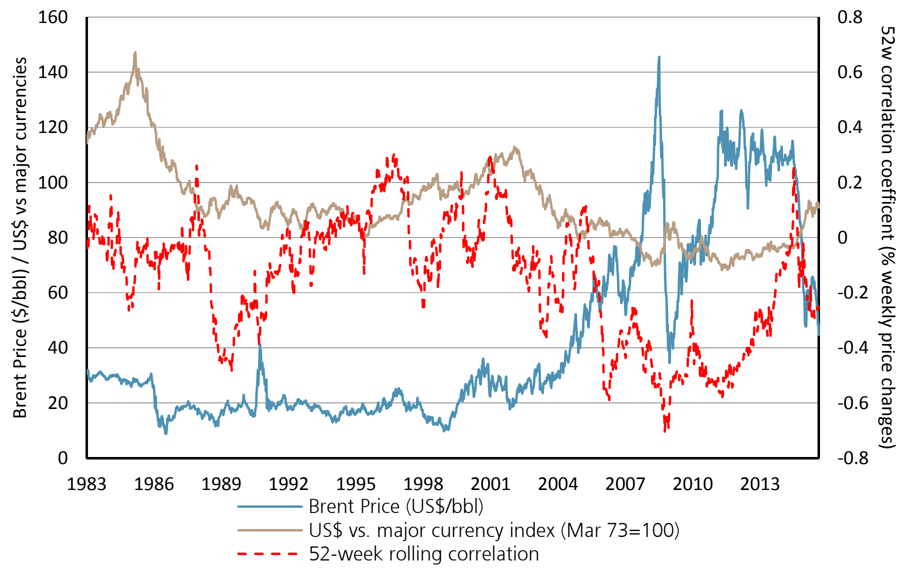
Periods of oil price volatility have tended to be accompanied by correlated US$ volatility. While historically this has sometimes been positive (the 1980s saw a collapse in both the US$ and the oil price), more recently (and more intuitively for a dollar-priced commodity) this has been negative. Both the 2008 and 2014-15 collapses in crude prices have been exacerbated by a strengthening dollar and we expect this correlation to persist in the near term with the industry remaining one functioning largely in dollars (we note a number of European producers switching reporting currency to the US$ in recent years in part to shield from FX volatility, Statoil and Det Norske being the latest to make the switch).

Figure 66: Net speculative positions (000 contracts) in WTI futures and options



Source: Thomson Reuters

Figure 67: US$ and oil price correlation



Source: UBS, DataStream

Risks to our forecast

It is self-evident that there are considerable risks to our forecast some of which we describe below.

Figure 68: Summary of risk/sensitivities

Scenario	Outcome	Price effect
GDP disappointment	Global GDP growth slips by 100bps (cf 2014).	Demand growth slips by ~500 kb/d (depending on regional distribution of slowdown) deferring market rebalancing by ~1 year. 2016<$60/bbl
China-specific slowdown	GDP growth at 4-5% not 6.8%	Demand impact: ~100kb/d incremental Chinese demand growth per annum – price impact likely $5-10/bbl while slowdown persists.
Inventory build	Inventory capacities being to fill	Would maintain prices in $40-60/bbl range while oversupply exists
Geopolitical events	Interruption to production – depends on producer	+$5-10/bbl per 0.5Mb/d within surplus production range
OPEC production quota	OPEC reinstates quota to balance market	>$70/bbl would likely be OPEC's target

Source: UBS

- **Global economic conditions:** Our forecasts for demand are based on our expectations of global economic activity and the historical relationship between it and oil demand growth. In 2014, disappointing global GDP in 2Q was one of the reasons that demand fell significantly short of estimates for the full year: we would warn that while the 1H15 outturn on oil demand growth has been strong, it was only in July last year that a relatively normal year for demand began to crack on the back of weaker macroeconomic data. Furthermore, the mix of global GDP is important – the link between economic growth and oil demand in OECD Europe is significantly weaker than in China for example (although this is also beginning to change), while stronger projected economic growth in India is also less impactful on global oil demand.

- **Inventories:** We are projecting a continued over-supplied market until 3Q16 if OPEC continues to produce at current levels. By inference we ought to see a significant build in physical inventories over the period. While this has a moderate pricing effect in its own right (the inventory overhang likely dampening the pace of recovery as the market moves back towards balance), in the event that storage were effectively to be filled then this could create distressed pricing for crude. In this event we would see major physical benchmarks at risk of falling back to below $50/bbl, although the more dramatic effect would likely be on regional differentials which could well see historical relationships breaking down, depending on where storage were to reach capacity. While estimating global storage capacity is not straightforward (historically we have been able to get a sense of utilisation through looking at previous inventory peaks and we are now above the historical record in terms of total OECD stocks), we would highlight several datapoints around this. As of 21 August, US working storage capacity (ex-SPR, which is running at 95% utilisation) was 83% full, compared to 60% utilisation at end-February, with around 90Mb of capacity remaining (although in practice there is some room to utilise contingency shell capacity not included in the working storage figure in the short term). However, placing undue focus on commercial inventories misses several key buyers: with China targeting an SPR of 500Mb by 2020, there is some 250-300Mb of capacity to be filled over 2015-20 (as mentioned above this has begun already with the commissioning of the 20Mb Qingdao facility in June). Additionally, India reportedly purchased its first SPR volumes for the Visakhapatnam facility (~9Mb capacity) in March and allocated additional funds to the project in August: the Mangalore and Padur facilities are nearly complete and awaiting pipeline connections, with a combined capacity of ~30Mb. A second phase of ~180Mb is planned, though the timeline is currently unclear, but regardless this serves to highlight alternative pools of storage capacity that may be able to absorb some of the near-term market imbalance.

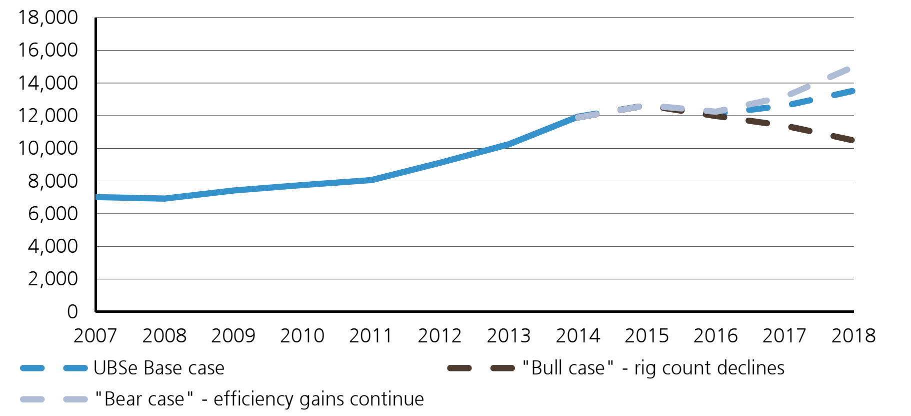
- **US production:** As discussed above, we expect the US rig count to flatten out at current levels for the balance of the year before slowly beginning to recover next year by ~5 rigs per month, while we assume that efficiency gains of ~3-5% m/m seen in 2015 to date begin to tail off in the balance of the year and through 2016.

  However, if prices remains as they are and the balance sheets of the US E&Ps are stretched even further, then there is a risk that we see a further wave of capex cuts among the US E&Ps and a rig count that remains flat or returns to declines in 2016.

Furthermore, it's not clear at this stage at what pace the US independents will continue the impressive improvements in drilling productivity seen to date. Over the past 24 months, new well oil production per rig is up 75%, 54%, 91% and 89% in the Bakken, Eagle Ford, Niobrara and Permian respectively. There are, of course, a number of contributing factors to this: retaining only the newest and most efficient rigs as capex is cut; high-grading of portfolios through drilling only the most attractive acreage; the effect of previously drilled but uncompleted well inventory that colours the official productivity figures; and genuine improvements in the way in which operators are developing and producing from new plays. It's difficult to isolate the final portion of this, the only aspect that can theoretically persist into the longer term (although intuitively this should be at a diminishing rate). In the shorter term, however, we expect to see all of the above contributing to a continued increase in productivity – all the more so given the extreme scrutiny on costs and capital discipline that upstream producers are now facing.

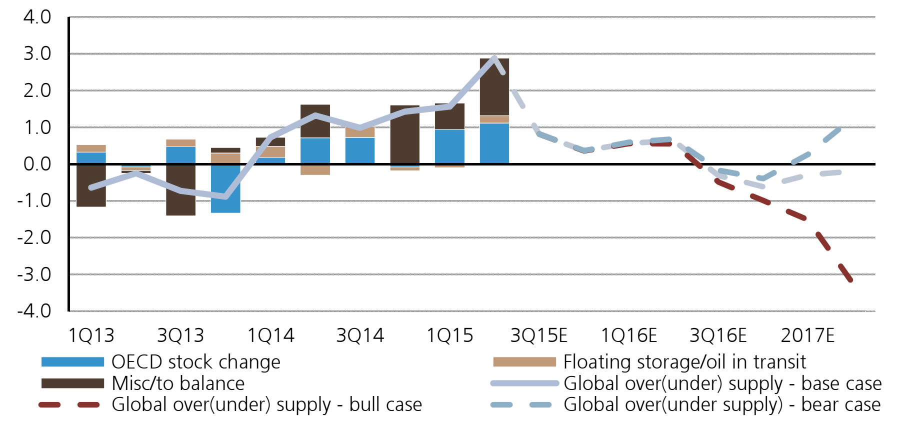
Thus, as an exercise we have sensitised our base case supply/demand balances to a series of different US production scenarios – each involving different assumptions around the trajectory of the US unconventional industry. The results of this are shown below.

Figure 69: US liquids production forecast under three scenarios



Source: UBS,EIA

Figure 70: Global supply/demand balance under three US supply scenarios and implied stock change (assuming OPEC produces 31Mb/d)



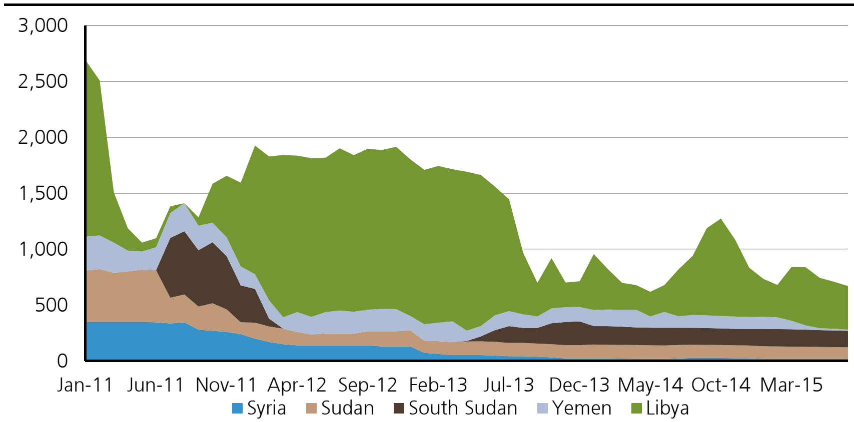
Source: UBS, IEA,EIA

- The first of these is a 'bull' case where balance sheet pressure leads to insolvencies in the US E&P space and 2016-17 drilling capex collapses, with the rig count reversing recent gains and declining by an average of 5 per month in the 'Big 4' plays. All being equal, such a scenario would imply that US liquids production has now peaked, exiting the year 3.5% down vs June and not recovering over the forecast horizon: GoM startups and drilling efficiency gains fail to offset the falling rig count and onshore decline rates, and total production declines by ~5% in each of 2016/17 (vs our base case of a return to growth at +4% y/y in 2017). This would have a meaningful impact on global balances, providing the market with significantly more room from 2H16 onwards to absorb any excess OPEC output (the 2017 'call' goes to 32.5Mboe/d in this scenario vs 31.3Mboe/d under our base case). We believe this could add $10-15/bbl to our medium-term outlook. This emphasises the degree to which global oil markets are now highly geared to investment decisions in the US onshore, and helps explain the significant benchmark price volatility around the weekly rig count datapoint that we have seen this year. Longer term we would be cautious about the conclusions of this exercise, however, as we see the economics of US shale as more competitive than much of the major IOCs' portfolios on a marginal cost basis – implying that at some point capital ought to begin returning to the US onshore and the rig count should pick up once again: most likely via an increase in the Majors' unconventional activity through acquiring financially distressed E&Ps.

- We have also examined a 'bear' case in which the impressive efficiency gains seen in 2015 to date continue at the same pace throughout 2015/16 and decline to a flat steady-state somewhat slower than we anticipate, reflecting a more rapid pace of innovation among operators in response to lower oil prices than we currently assume. Under these assumptions, US production begins to post y/y gains in 4Q16, and exits 2018 >1Mb/d above our base case forecast. As a result, the present market imbalance persists through 2017 and 2018. Such a scenario would also have profound implications for the long-run marginal cost analysis we set out above, with shale becoming both more economic, and providing a much greater proportion of incremental supply, and thus would represent downside risk to both our short- and longer-term oil-price forecasts. Thus we believe that the monthly drilling productivity reports will continue to be closely watched by the market for indications that might imply US shale is in fact becoming the long-run marginal producer – and one capable of achieving economic rates of return at $50-70/bbl in the key plays.

- **Geopolitics/supply shocks:** Significant interruptions to supply have been a feature of the market in the past few years (see our discussion of OPEC supply above) and we expect this to continue in a number of key geographies. While relatively small producers, **Yemen** and **Syria** remain essentially shut-in: and there are little signs of this abating in the near term with Saudi troops on the ground in the former, and the ongoing air campaign against ISIL in the latter (with Turkey the most recent nation to join to US-led coalition in the country). The situation in **South Sudan** appears to have improved somewhat in recent weeks with the signing of a new IGAD-brokered ceasefire agreement, although production remains well below the pre-conflict capacity of ~350kb/d and previous ceasefire agreements have proved ephemeral. With CNPC evacuating personnel from the Paloch fields (the main area in the country still producing) in May, and the only export route through Sudan vulnerable to political disputes, we expect production from the country to remain depressed until a ceasefire proves effective and the major IOCs are willing to return to the country. As discussed above, **Libyan** production remains highly volatile, with the conflict continuing to significantly curtail production and little prospect of a significant recovery at present.

Figure 71: Crude production from main 'at risk' countries – kb/d



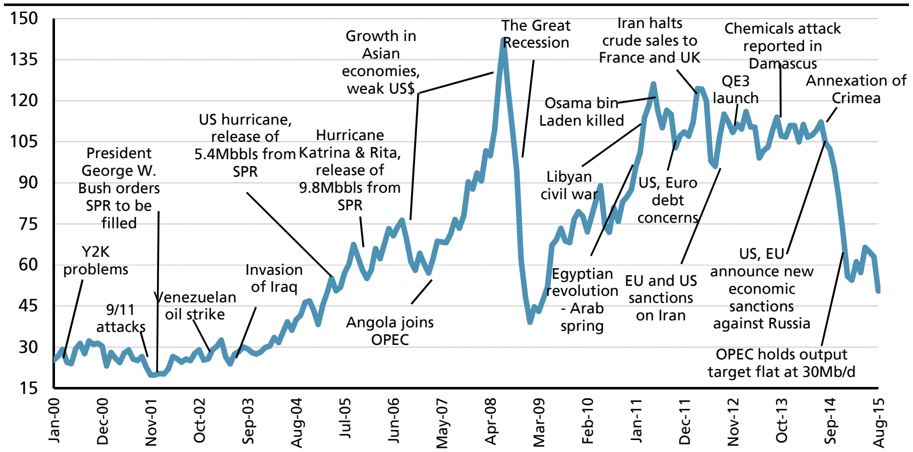
Source: IEA, UBS

- **Nigeria** has seen an election pass peacefully, and the current insurgency is largely restricted to the north of the country, and thus unlikely to directly impact oil production. Successful reform of the NNPC and better deterrence of crude theft in the country (a possibility given increasing domestic ownership of onshore fields following SPDC's ongoing divestment programme) could see upside to volumes in the near term, although longer-term we expect production to decline given the lack of major project sanctions in the country (not unrelated to the region's relatively unattractive positioning on the global cost curve given a restrictive local content policy and relatively harsh fiscal terms). Implementation of new fiscal terms robust for periods of lower oil prices and offering incentives for marginal field developments could offset this somewhat, as they could in **Angola**, where we see close to zero new FIDs being made in the current oil price environment (the only one likely in 2015 being on a wholly NOC-owned block, Cameia).

- Low oil prices do look to be creating considerable financial and political risks in **Venezuela**, which has reportedly sought an emergency OPEC meeting in conjunction with Russia to seek an output cut. Of the major OPEC producers, the country has been hit hardest by the oil price collapse: crude accounts for 96% of export revenues and these have declined by $36bn vs the 2013-14 average of $79bn. With significant social spending commitments and $6.3bn of debt falling due before the end of 2015, the fiscal situation is precarious – with the government currently printing bolivares in significant volumes and paying creditors through a combination of FX reserves (which currently stand at $16.9bn and at the current rate of depletion could be exhausted in 1H16), selling assets and securitising oil receivables. Throughout the 20th century we can identify a number of cases where major geopolitical events have at least in part been shaped by the oil prices and not the other way round (for instance, the invasion of Kuwait by Iraq and the decline of the Soviet economy) and we would not rule out similar change as the eventual outcome of the current oil price slump. While it is impossible to forecast new events, we would argue that Venezuela represents one of the countries most at risk of seeing major political upheaval given the ongoing economic crisis.

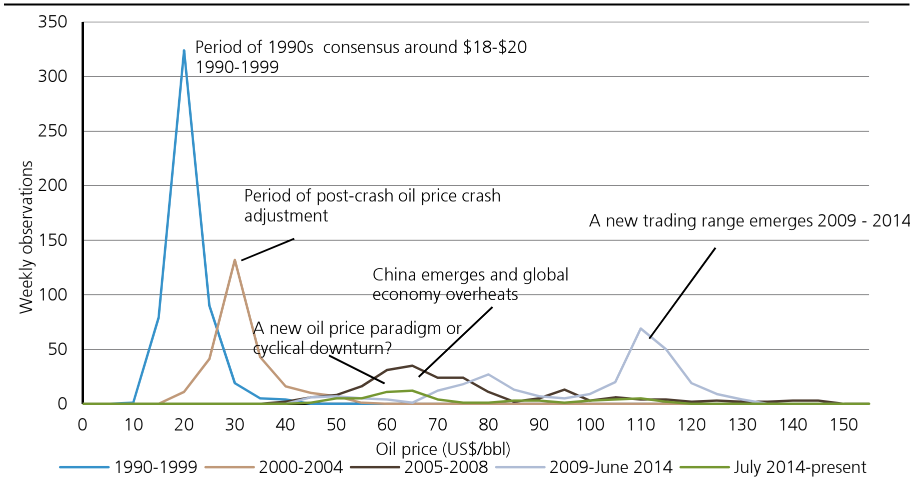
- Overall we believe that interruption to a medium-sized OPEC producer could add $5-10/bbl in the near-term, but on a longer-term view the group has sufficient spare capacity emerging in Iran and Iraq to offset this somewhat.

Figure 72: Annotated oil price history since 2000



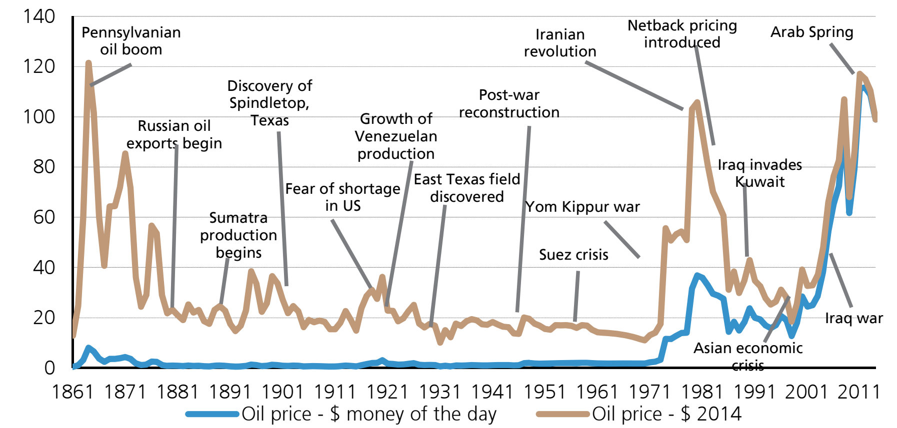
Source: DataStream, UBS

Figure 73: Oil price historical trading ranges



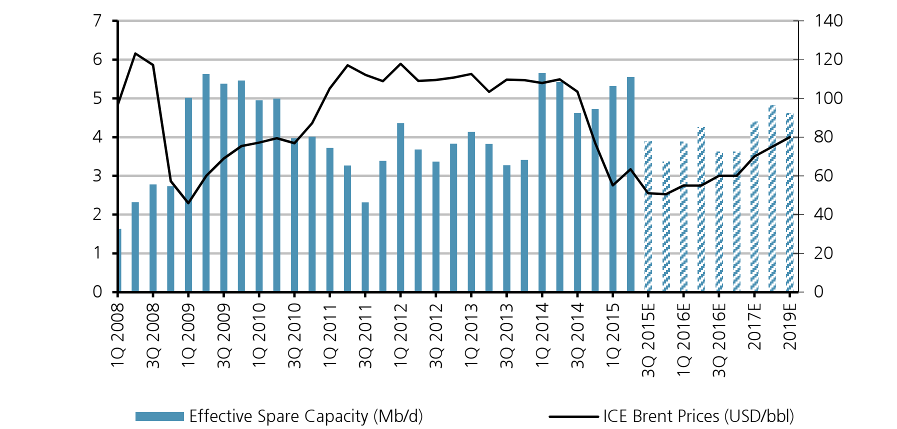
Source: UBS, Datastream

Figure 74: Annotated oil price history 1861-2014 ($/bbl)



Source: BP statistical review of world energy. Note: 1861-1944 is US average, 1945-1983 Arabian Light, 1984- Brent

Figure 75: OPEC effective spare capacity (Mb/d, LHS) vs Brent price ($/bbl, RHS)



Source: IEA, UBS. Note: effective spare capacity defined as call on OPEC less sustainable OPEC crude production capacity

Figure 76: Global Oil Supply/Demand balance (Mb/d)

Demand	2013	1Q14	2Q14	3Q14	4Q14	2014	1Q15	2Q15	3Q15E	4Q15E	2015E	1Q16E	2Q16E	3Q16E	4Q16E	2016E	2017E	2018E	2019E	2020E
OECD Americas	24.1	23.9	23.7	24.2	24.5	24.1	24.1	24.1	24.7	24.8	24.4	24.2	24.1	24.7	24.8	24.4	24.6	24.7	24.8	24.9
Of which: US	19.3	19.1	19.0	19.5	19.8	19.3	19.5	19.6	19.8	19.9	19.7	19.5	19.5	19.8	19.9	19.7	19.8	19.9	20.0	20.1
OECD Europe	13.6	13.0	13.3	13.8	13.4	13.4	13.6	13.4	14.1	13.7	13.7	13.5	13.5	14.0	13.6	13.7	13.5	13.4	13.3	13.2
OECD Asia-Pacific	8.4	8.9	7.7	7.7	8.3	8.2	8.8	7.7	7.7	8.3	8.1	8.7	7.7	7.7	8.3	8.1	8.1	8.1	8.0	7.9
Total OECD	**46.0**	**45.7**	**44.7**	**45.7**	**46.3**	**45.6**	**46.5**	**45.1**	**46.5**	**46.7**	**46.2**	**46.4**	**45.2**	**46.4**	**46.7**	**46.2**	**46.2**	**46.2**	**46.1**	**46.0**
FSU	4.7	4.6	4.8	5.0	4.9	4.8	4.6	4.8	4.9	4.8	4.8	4.6	4.7	4.9	4.9	4.8	4.9	5.0	5.0	5.1
China	10.0	9.8	10.3	10.4	10.8	10.3	10.6	10.9	10.7	11.1	10.8	10.9	11.2	11.0	11.4	11.1	11.4	11.8	12.1	12.4
Other Asia	11.8	12.1	12.1	11.8	12.2	12.0	12.4	12.5	12.1	12.5	12.4	12.7	12.8	12.4	12.9	12.7	13.1	13.3	13.5	13.7
Latin America	6.8	6.7	6.9	7.1	7.1	7.0	6.8	6.9	7.1	7.1	7.0	6.8	7.0	7.2	7.2	7.1	7.2	7.3	7.5	7.6
Middle East	7.9	7.8	8.2	8.5	7.9	8.1	7.8	8.3	8.7	8.1	8.2	8.0	8.5	9.0	8.4	8.5	8.7	9.0	9.2	9.5
Africa	3.9	4.0	4.0	3.9	4.0	4.0	4.1	4.1	4.0	4.1	4.1	4.3	4.2	4.2	4.3	4.2	4.3	4.4	4.5	4.7
Total Non-OECD	**45.8**	**45.6**	**47.0**	**47.4**	**47.5**	**46.9**	**47.0**	**48.2**	**48.3**	**48.5**	**48.0**	**48.1**	**49.2**	**49.4**	**49.7**	**49.1**	**50.4**	**51.5**	**52.6**	**53.7**
TOTAL DEMAND	**91.8**	**91.4**	**91.7**	**93.1**	**93.8**	**92.5**	**93.5**	**93.3**	**94.8**	**95.3**	**94.2**	**94.5**	**94.5**	**95.9**	**96.5**	**95.3**	**96.6**	**97.7**	**98.8**	**99.8**
Supply																				
OECD Americas	17.1	18.3	18.8	19.2	19.8	19.0	19.9	19.6	19.6	19.4	19.6	19.4	19.0	19.3	19.5	19.3	19.9	21.1	21.9	22.3
Of which: US	10.3	11.1	11.9	12.2	12.6	11.9	12.7	12.9	12.7	12.3	12.6	12.1	12.1	12.2	12.2	12.2	12.6	13.6	14.1	14.4
OECD Europe	3.2	3.4	3.1	3.0	3.4	3.2	3.3	3.3	3.1	3.4	3.3	3.3	3.4	3.1	3.4	3.4	3.4	3.2	3.0	3.2
OECD Asia-Pacific	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6
Total OECD	**20.8**	**22.1**	**22.5**	**22.7**	**23.6**	**22.7**	**23.6**	**23.3**	**23.2**	**23.3**	**23.4**	**23.2**	**22.8**	**23.0**	**23.4**	**23.2**	**23.8**	**25.0**	**25.5**	**26.1**
FSU	13.8	13.9	13.8	13.8	13.9	13.9	14.0	14.0	13.8	13.9	13.9	14.1	14.1	13.9	14.0	14.0	14.2	14.3	14.3	14.2
China	4.3	4.3	4.3	4.2	4.4	4.3	4.3	4.4	4.3	4.4	4.4	4.2	4.3	4.2	4.3	4.3	4.2	4.1	4.1	4.1
Other Asia	3.5	3.5	3.5	3.4	3.5	3.5	3.6	3.6	3.6	3.7	3.6	3.4	3.4	3.4	3.4	3.4	3.3	3.2	3.1	2.9
Latin America	4.2	4.2	4.3	4.5	4.6	4.4	4.6	4.6	4.6	4.7	4.6	4.7	4.7	4.7	4.8	4.7	4.9	5.0	5.2	5.4
Middle East	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2
Africa	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.0	2.1
Total Non-OECD	**29.5**	**29.8**	**29.7**	**29.7**	**30.2**	**29.8**	**30.4**	**30.2**	**29.9**	**30.2**	**30.2**	**30.0**	**29.9**	**29.7**	**30.0**	**29.9**	**30.0**	**30.0**	**30.0**	**30.0**
Biofuels	2.0	1.7	2.3	2.5	2.3	2.2	1.8	2.4	2.6	2.3	2.3	1.8	2.3	2.6	2.3	2.3	2.3	2.3	2.3	2.4
Processing Gains	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.3	2.3	2.3	2.4	2.4	2.5
Total Non-OPEC	**54.5**	**55.8**	**56.6**	**57.2**	**58.3**	**57.0**	**58.0**	**58.1**	**58.0**	**57.9**	**58.1**	**57.4**	**57.3**	**57.7**	**58.0**	**57.6**	**58.4**	**59.6**	**60.3**	**61.0**
OPEC non-Crude	6.2	6.3	6.3	6.4	6.4	6.3	6.5	6.6	6.6	6.7	6.6	6.7	6.8	6.9	6.9	6.8	6.9	6.9	6.9	6.9
OPEC Crude Production	*30.5*	*30.0*	*30.1*	*30.5*	*30.5*	*30.3*	*30.5*	*31.5*												
Call on OPEC Crude	**31.1**	**29.3**	**28.8**	**29.5**	**29.1**	**29.2**	**28.9**	**28.6**	**30.2**	**30.6**	**29.6**	**30.4**	**30.4**	**31.3**	**31.6**	**30.9**	**31.3**	**31.2**	**31.6**	**31.9**
TOTAL SUPPLY	**91.2**	**92.1**	**93.0**	**94.1**	**95.2**	**93.6**	**95.0**	**96.2**	**94.8**	**95.3**	**95.3**	**94.5**	**94.5**	**95.9**	**96.5**	**95.3**	**96.6**	**97.7**	**98.8**	**99.8**
OPEC Crude Capacity	34.7	34.9	34.2	34.2	33.8	34.3	34.2	34.2	34.1	34.0	34.1	34.3	34.6	34.9	35.2	34.8	35.7	36.0	36.2	36.5
OPEC Effective Spare Capacity**	**3.7**	**5.7**	**5.4**	**4.6**	**4.7**	**5.1**	**5.3**	**5.5**	**3.9**	**3.4**	**4.5**	**3.9**	**4.3**	**3.6**	**3.6**	**3.9**	**4.4**	**4.8**	**4.6**	**4.6**

Source: IEA, EIA, national energy statistics agencies inc. ANP and NPD, national oil companies, UBS.**OPEC effective spare capacity defined as call on OPEC crude less OPEC crude production capacity.

Figure 77: Oil Demand/Supply balance comparison

		2014	1Q15	2Q15	3Q15E	4Q15E	2015E	1Q16E	2Q16E	3Q16E	4Q16E	2016E	2015E y/y	2016E y/y
	Demand													
IEA	OECD	45.6	46.6	45.1	46.1	46.5	46.1	46.4	45.3	46.2	46.7	46.2	0.5	0.1
	Non-OECD	47.0	47.1	48.4	48.5	48.7	48.2	48.4	49.5	49.8	50.1	49.4	1.1	1.3
	Total Demand	92.6	93.6	93.5	94.5	95.2	94.2	94.8	94.8	96.0	96.8	95.6	1.6	1.4
EIA	OECD	45.7	46.5	45.2	46.2	46.7	46.2	46.8	45.7	46.5	46.9	46.5	0.5	0.3
	Non-OECD	46.7	46.2	47.8	48.2	47.6	47.5	47.4	49.0	49.3	48.8	48.6	0.8	1.2
	Total Demand	92.4	92.8	93.0	94.3	94.3	93.6	94.1	94.7	95.8	95.7	95.1	1.3	1.5
OPEC	OECD	45.8	46.5	45.4	46.0	46.6	46.1	46.6	45.6	46.2	46.7	46.3	0.3	0.2
	Non-OECD	45.5	45.4	46.4	47.2	47.3	46.6	46.6	47.5	48.3	48.5	47.7	1.1	1.2
	Total Demand	91.3	91.9	91.8	93.2	93.9	92.7	93.3	93.1	94.6	95.2	94.0	1.4	1.3
UBS	OECD	45.6	46.5	45.1	46.5	46.7	46.2	46.4	45.2	46.4	46.7	46.2	0.6	0.0
	Non-OECD	46.9	47.0	48.2	48.3	48.5	48.0	48.1	49.2	49.4	49.7	49.1	1.1	1.1
	Total Demand	92.5	93.5	93.3	94.8	95.3	94.2	94.5	94.5	95.9	96.5	95.3	1.7	1.1
	Supply													
IEA	Non-OPEC	57.0	58.2	58.4	57.9	57.9	58.1	57.8	57.7	57.9	58.1	57.9	1.1	-0.2
	OPEC non-crude	6.4	6.5	6.6	6.7	6.7	6.6	6.8	6.8	6.9	6.9	6.9	0.3	0.2
	Call on OPEC crude	29.3	28.8	28.5	30.0	30.6	29.5	30.3	30.2	31.1	31.8	30.8	0.2	1.4
	OPEC crude	30.3	30.5	31.5										
	Total Supply	93.7	95.3	96.5										
EIA	Non-OPEC	57.0	58.1	58.4	58.7	58.4	58.4	57.7	58.4	58.8	59.1	58.5	1.4	0.1
	OPEC non-crude	6.3	6.3	6.4	6.5	6.5	6.4	6.6	6.7	6.7	6.8	6.7	0.2	0.3
	Call on OPEC crude	29.1	28.4	28.3	29.2	29.4	28.8	29.9	29.7	30.3	29.8	29.9	-0.3	1.1
	OPEC Crude	30.1	30.3	30.9	31.3	30.9	30.9	30.5	30.6	31.0	31.3	30.8	0.8	0.0
	Total Supply	93.3	94.6	95.7	96.4	95.9	95.7	94.7	95.6	96.4	97.2	96.0	2.3	0.3
OPEC	Non-OPEC	56.5	58.1	57.5	57.0	57.3	57.5	57.7	57.4	57.5	58.4	57.7	1.0	0.3
	OPEC non-crude	5.8	5.9	5.9	6.1	6.1	6.0	6.1	6.2	6.2	6.2	6.2	0.2	0.2
	Call on OPEC crude	29.0	27.9	28.3	30.2	30.5	29.2	29.5	29.6	30.8	30.6	30.1	0.2	0.9
	OPEC Crude	30.1	30.3	31.2										
	Total Supply	92.4	94.3	94.4										
UBS	Non-OPEC	57.0	58.0	58.1	58.0	57.9	58.1	57.4	57.3	57.7	58.0	57.6	1.1	-0.5
	OPEC non-crude	6.3	6.5	6.6	6.6	6.7	6.6	6.7	6.8	6.9	6.9	6.8	0.3	0.2
	Call on OPEC crude	29.2	28.9	28.6	30.2	30.6	29.5	30.4	30.4	31.3	31.6	30.9	0.4	1.4
	OPEC Crude	30.3	30.5	31.5										
	Total Supply	92.5	93.5	93.3										

Source: IEA, EIA, OPEC, UBS

Figure 78: Global Oil Supply/Demand balance (Mb/d) – changes from previous forecasts

Demand	2013	1Q14	2Q14	3Q14	4Q14	2014	1Q15	2Q15	3Q15E	4Q15E	2015E	2016E	2017E	2018E	2019E	2020E
OECD Americas	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.2	0.2	0.1	0.1	0.0	-0.1	-0.2
US	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0
OECD Europe	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	-0.1	0.1	0.0	0.0	0.2	0.3	0.4	0.4	0.4
OECD Asia-Pacific	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total OECD	**-0.1**	**0.0**	**0.0**	**-0.1**	**-0.1**	**0.0**	**0.1**	**0.2**	**0.5**	**0.2**	**0.2**	**0.3**	**0.4**	**0.4**	**0.3**	**0.3**
FSU	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Other Asia	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	0.0	0.0	0.0	0.0	0.0
Latin America	0.0	0.0	0.0	0.0	0.0	0.0	0.3	-0.1	-0.1	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2
Middle East	0.0	-0.1	0.0	0.0	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.2
Africa	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	-0.1
Total Non-OECD	**-0.1**	**-0.1**	**0.1**	**0.0**	**-0.1**	**0.0**	**0.2**	**0.3**	**0.0**	**0.0**	**0.0**	**0.0**	**-0.1**	**-0.2**	**-0.3**	**-0.3**
TOTAL DEMAND	**-0.1**	**-0.1**	**0.1**	**-0.1**	**-0.2**	**-0.1**	**0.3**	**0.5**	**0.5**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**	**0.1**	**0.0**
Supply																
OECD Americas	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	-0.3	0.0	-0.5	-0.3	0.3	0.7	0.9
US	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	-0.3	0.0	-0.5	-0.3	0.4	0.8	0.9
OECD Europe	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0
OECD Asia-Pacific	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total OECD	**0.0**	**0.1**	**0.0**	**0.1**	**0.1**	**0.1**	**-0.1**	**0.1**	**0.1**	**-0.2**	**0.0**	**-0.4**	**-0.3**	**0.3**	**0.7**	**1.0**
FSU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.1	-0.1	-0.2
China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Asia	0.0	0.0	0.0	0.0	-0.1	0.0	-0.1	-0.1	0.0	-0.1	-0.1	-0.2	-0.3	-0.3	-0.4	-0.4
Latin America	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	-0.1	0.1	0.0	0.0	0.0	0.0	-0.1
Middle East	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Africa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	-0.1	-0.1	-0.2	-0.2	-0.1
Total Non-OECD	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.2**	**0.1**	**-0.1**	**-0.3**	**0.0**	**-0.3**	**-0.3**	**-0.4**	**-0.5**	**-0.5**
Biofuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0
Processing Gain	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Non-OPEC	**0.0**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.4**	**0.0**	**-0.6**	**0.0**	**-0.6**	**-0.6**	**-0.1**	**0.2**	**0.5**
OPEC non-crude	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Call on OPEC Crude	0.0	-0.1	0.0	-0.1	-0.2	-0.1	0.1	0.1	0.5	0.7	-0.1	0.4	0.0	0.4	-0.1	-1.5
TOTAL SUPPLY	**-0.1**	**0.0**	**0.1**	**0.1**	**0.1**	**0.0**	**0.1**	**3.4**	**0.5**	**0.2**	**1.1**	**0.3**	**0.3**	**0.3**	**0.1**	**0.0**
OPEC Crude Capacity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.6	-0.1	-0.6	-0.4	-0.5	-0.5	-0.5
OPEC Effective Spare Capacity - at 'call on OPEC'	0.0	0.1	0.0	0.1	0.2	0.1	-0.1	-0.1	-0.5	-1.3	-0.1	-1.5	-1.5	-2.0	-1.4	-0.6

Source: IEA, EIA, national energy statistics agencies inc. ANP and NPD, national oil companies, UBS.**OPEC effective spare capacity defined as call on OPEC crude less OPEC crude production capacity. Changes to historic figures are due to revisions by statistical agencies.

Natural gas

Overview

Change is on the way. Around the end of 2015, the US will begin to export LNG. This will alter the dynamics of the global gas market and likely have increasing influence on the US market. It will begin the process of joining up a hitherto regional industry to one that is genuinely more global although the linkages will still be very much smaller than the oil market and the friction in trading between markets significantly greater. Only around 10% of the global gas market is accounted for by LNG and 20% by international pipeline (although this is significantly less when regional trading blocs like the EU and NAFTA are excluded).

Our projections for LNG supply over the remainder of the decade suggest the market gets looser, as is the general expectation among investors, we believe. This should be mainly in the form of US supply (as noted above) and Australian supply. This may well be offset to some degree by contractual structures, late start-ups and also by emerging demand.

Europe has largely become a spot-price-based market. While global LNG markets are fairly easy we believe NBP/TTF will price off Henry Hub, except perhaps in the high demand 1Q. The US will likely see firmer prices over the medium term as domestic demand and exports ramp up, but it seems certain to continue to enjoy some of the lowest prices available to any industrialised economy, such is the scale of its shale resource. Asia Pacific markets will also be impacted by the new US supply, although at the level of oil price we expect to see in the next two years it doesn't seem likely to be a catalyst for a change to pricing. The push for a wholesale reset of Asian LNG prices to a Henry Hub indexation seems to have eased, although a mix of different pricing structures (either within the portfolio or via some form of hybrid pricing) looks to be increasingly favoured. A relatively high proportion of new LNG in the hands of new offtakers/trading houses/uncontracted does create some risk to pricing structures, we believe, as the nature of the hitherto relatively orderly market changes.

Natural gas has typically been regarded as the higher growth fuel versus oil, yet global consumption grew by only 0.4% in 2014 (versus a 10-year trend growth of 2.4% p.a). This was because Europe was down ~5% (EU down 11.6%) on warmer weather, price effects favouring coal for electricity generation and the incursion of renewables. In the context of gas being seen as a 'bridge' fuel to a lower-carbon future, this must be a significant worry for the oil and gas industry – and clearly prompted the public letter in the Financial Times from the CEOs of the European oil companies calling for effective carbon pricing. While the structural favouring of natural gas may be re-asserted in the context of commitments around COP21, ultimately it feels, even more than oil, that natural gas was over-priced. This is seemingly confirmed by observation of the US market where consumption grew by 2.9% (in-line with the trend growth in that market since the advent of cheap US shale gas in the middle of the last decade).

Middle East demand has been growing very strongly with growing populations and authorities' desire to switch from burning oil for power. Asia, meanwhile, which is largely an LNG market, is likely to see lower growth as nuclear power returns in Japan, more nuclear and coal-fired generation starts in South Korea and Chinese economic growth slows. Notably, additional sources of demand for LNG continue to emerge and are likely to be facilitated further by more available uncontracted supply at lower prices and the increasing use of FSRUs.

Our current view is that strong domestic demand plus exports will see US natural gas prices firm over time, although on a relative basis they should remain low and confer a major structural benefit to the US economy.

We do expect European natural gas demand to recover from its 2014 nadir but that demand growth is likely to be insipid at best. Europe remains well supplied from Norway, Russia, North Africa, the Caucasus and from LNG markets, with the risk it sees excess LNG dumped into it. The link with US pricing (which existed for a time with Europe an alternative to the US for Middle East supply) is likely to be re-established with US exports into the Atlantic Basin.

In Asia, softening demand from Japan, South Korea and China should be a major headwind nothwithstanding the emergence of new demand sources and the likely increase in size of the Indian market in a lower price world. We think the persistence of low oil prices will dampen the enthusiasm for changing contract pricing structures, as the discussion, we suspect, has always been one about absolute price, dressed up as one about price indexation.

We see spot LNG remaining a small market and varying somewhat season to season as to the pricing formula it is basing off.

Price

Figure 79: Natural gas price forecasts

	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
Henry Hub ($/Mbtu)	2.76	3.66	4.73	2.87	3.25	3.75	4.00	4.00
NBP ($/Mbtu)	9.37	10.49	8.41	6.87	6.59	7.18	8.03	8.26
NBP (p/therm)	59.11	67.06	51.10	44.27	41.50	45.50	50.75	52.25
Euro contract ($/Mbtu)	13.84	13.96	13.14	8.28	6.70	7.49	8.99	9.51
Asian LNG marker	17.08	16.65	16.65	10.60	8.50	9.70	11.40	12.10

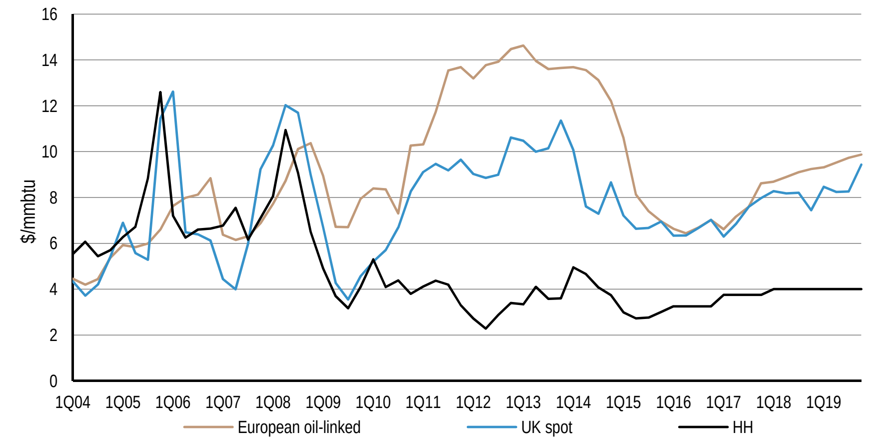
Source: Source: UBS estimates

We expect the US market to continue to reflect gas-on-gas competition and to show some upward trend as both domestic consumption and exports rise strongly with some short-term upside risk as chunks of new demand come onstream. What has been clear is that the industry continues to benefit from positive efficiency gains, maintaining the competitive position of basins other than the prolific Marcellus/Utica, which has been responsible for most of the incremental supply over the past 2-3 years.

We see forecast Asian LNG prices retaining their link to oil prices because of the competitive pricing outcome in a lower oil price environment. Spot prices are likely to reflect this contractual pricing calculation rather than a US netback price because these are less competitive with the oil:Henry Hub spread having closed. That being said there is risk that distressed sellers of LNG do emerge, perhaps leading to weak spot prices (a relatively small proportion of the market) in the lower-demand quarters.

In Europe we forecast that the spot prices will trade on the basis of a Henry Hub delivered price with some effect from oil indexation in 1Q, which is the quarter of highest demand in both Asia and Europe. This linkage to the oil price is somewhat preserved by the increasingly archaic European contract formulas but also via netback pricing out of Asia in high-demand periods.

Figure 80: Global natural gas historical prices by region



Source: UBS, Datastream, Bloomberg

US natural gas market

While US natural gas production continues to show robust y/y growth, we expect a moderate recovery in prices in 2016-17 driven by an improved rate of demand growth. While the plunge in the gas rig count this year coupled with an expected slowdown in the rate of growth in associated gas from greatly reduced oil-directed activity should combine to moderate the pace of supply growth next year, improved demand growth should be the natural gas headline in 2016, driven by the onset of LNG exports, increased exports to Mexico, and the retirement of coal-fired electric generating facilities.

Supply outlook

Our supply/demand model assumes decelerating US production growth to the tune of ~4-4.5% (3 Bcfd) per annum in 2016 and 2017, down from the >4 Bcfd of growth in 2014. We estimate virtually all of the continued volume growth will come from the Marcellus/Utica; Bentek assumes regional supply growth of +18% YoY (+3.6 Bcfd) in 2016 and +8% YoY (+1.9 Bcfd) in 2017. We expect US production outside of the northeast to moderate from 1.2 Bcfd YoY YTD to modest declines in 2016 given the drop in the rig count. This robust US production growth should be partly offset by modestly lower Canadian imports (UBSe -3% per annum).

Demand outlook

We are forecasting L48 demand growth of 12 Bcf/d by 2018 and >16 Bcf/d by 2019 from a 73 Bcf/d market size in 2014 reaching ~90 Bcf/d in 2019. This is an acceleration of demand growth coming from three principal areas: 1) increased retirement of coal-fired electric generating facilities, with 2016 providing a peak of 24-42 GW of capacity retiring; 2) ~10 Bcfd of approved LNG export capacity expected to be on line by 2020, with initial exports starting in 2016; and 3) low gas and NGL prices stimulating build-out of the chemical industry infrastructure that could add ~2.5 Bcfd of industrial demand by 2020, with the first notable wave of projects coming on stream by 2018.

We forecast total US demand will be up +3.7% in 2016 and another +3.3% in 2017, largely reflecting continued demand growth from the **electric power sector** (UBSe +4.8% in 2016) as well as steady growth from the **industrial** and **transportation** sectors, each expected to rise 3-4% per annum in 2016-17. Over the longer term, we expect demand growth to increase ~3.2 Bcfd per annum from 2015-19 on a combination of LNG exports commencing and ramping up (+6.9 Bcfd by 2019), accelerated retirement of coal-generating facilities improving power demand (+2.6 Bcfd), and the build-out of the chemical industrial base on the Gulf Coast (+2.3 Bcfd by 2019) due to low gas and NGL prices. This is a material step-up in demand growth relative to the 2.1 Bcfd per annum growth from 2009-14.

Price outlook

Following the sharp fall-off in 1H15 prices increasing coal-to-gas fuel switching by ~3 Bcfd YTD, we believe the market is roughly balanced, and see limited upside for natural gas prices from current levels heading into the winter of 2015-16 as low prices are needed to prevent fuel switching reverting back to coal. While we estimate the weather-adjusted S/D balance has been 2.2 Bcfd undersupplied vs. last year when the industry had a record high refill reason, it has been 0.4 Bcfd oversupplied vs. the 5-year average over the past four weeks as robust supply growth has been partly offset by increased fuel-switching from coal to natural gas. Nonetheless, while current storage inventories entered this past winter ~0.2 Tcf below normal, they are now 0.1 Tcf above the 5-year average. And assuming normal weather and the current weather adjusted S/D balance, we estimate inventories are tracking to enter the winter of 2015-16 at ~3.9 Tcf, just 100 Bcf above the norm and implying the market has largely re-balanced and should enable price stability for the balance of the injection season.

Over the longer term, we believe industry can adequately supply a more demand growth outlook at a price of ~$4.00/MMBtu. Including ~5 Bcfd of YoY growth from the Marcellus/Utica, natural gas volumes in the US exited 2014 up ~8 Bcfd YoY, illustrating the robustness of production growth in a >$4/MMBtu environment. As prices have receded to ~$3/MMBtu, we expect non-northeast production growth to moderate from ~2 Bcfd at YE14 to a modest 0.5 Bcfd YoY decline in 2015. Thus, while we still expect volume growth from the Marcellus/Utica to slow to ~2 Bcfd YoY in 2018+, we now believe a normalized price of ~$4/MMBtu will incentivize enough growth from higher-cost basins to meet the incremental longer-term demand growth.

European natural gas market

Supply/demand

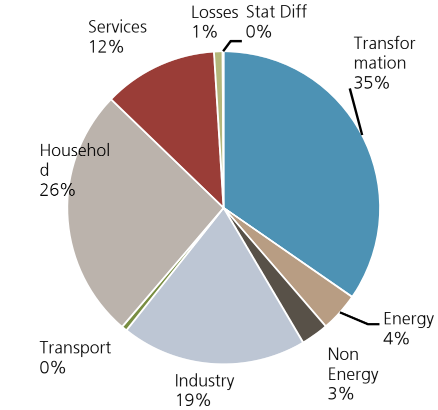
2013/14 in the European gas market can be characterised as going from famine to feast. At the end of March 2013 after a very cold late winter, European gas storage was at 27%. At the end of March 2014 after an unusually warm winter, gas storage was at 45%. 2014 will likely see the lowest level of European natural gas demand since 2002. This loosening in the European gas market has led to a ~30% decline in spot prices. Notably this decline in prices has come despite the Russia/Ukraine crisis and a perceived threat to Russian supply to Western Europe.

We'd add two further factors to the big move in gas prices. The first is that there has been a significant decline in demand for natural gas in Europe, hit by the impact of government-subsidised renewables and the availability of cheap coal imports. Secondly, deregulation in Europe means that increasingly pricing is by reference to hub and hence is more sensitive to the supply/demand characteristics of the gas market as opposed to referencing the oil market.

Our forecasts assume a normalisation of weather more akin to the 2014/15 winter than the 2013/14 winter. However, the underlying structural trends should remain. That is, we expect gas-fired power to struggle against a combination of renewables and cheap coal. There may be some benefit from new climate change policies but we don't assume these will be material. Domestic consumption is likely to be stagnant because of the maturity of the market in terms of population growth and gas penetration plus the impact of energy-saving initiatives. Industrial consumption will also be largely static because of the dwindling share of heavy industry in the region and ongoing efficiency.

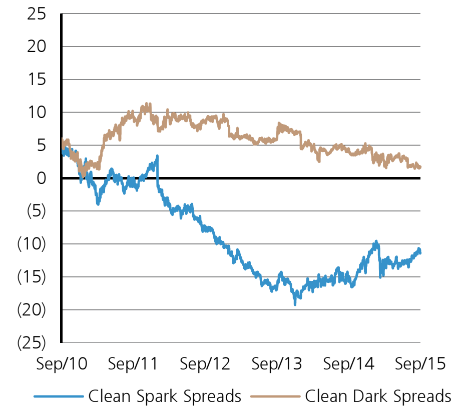
Europe has typically sourced between 40-50% of its gas from imports. The vast majority of these imports have been via pipeline, with Russia accounting for ~25-30% of total market consumption and the balance made up of supply from Algeria, Libya and Azerbaijan plus Iran (to Turkey). Routinely, LNG has made up ~10-15% of European natural gas requirements, but we think this will be below 10% until the end of the decade unless there is a concerted effort by the EU to move away from a reliance on Russia.

Figure 81: European gas demand by use



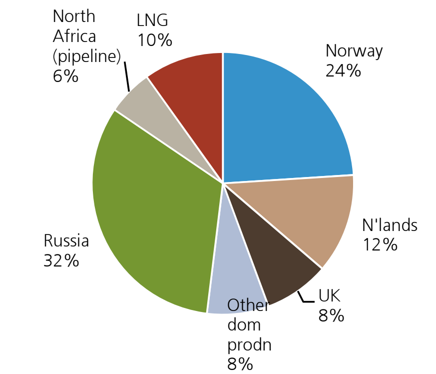
Source: IEA

Figure 82: German clean spark and clean dark spread (Eur/MWh)



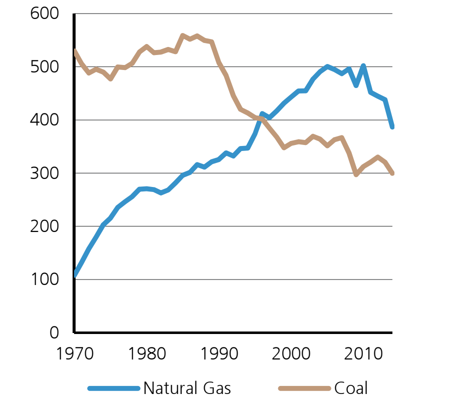
Source: Datastream, UBS

Figure 83: European gas by source (2013)



Source: BP Statistical Review of Energy, UBS

Figure 84: EU gas and coal consumption evolution (Bcm/Bcme)



Source: BP Statistical Review of Energy, UBS

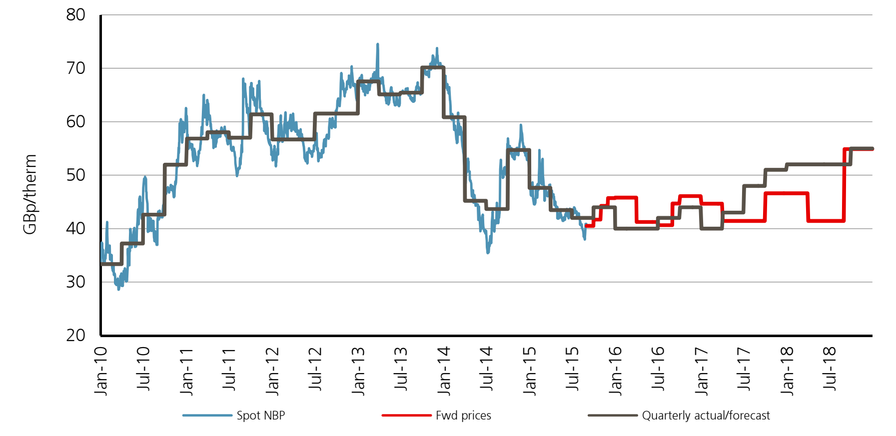
European pricing

Our forecast for European hub natural gas prices is derived from a view that the spot price will represent the price needed to meet the cost of the marginal gas supply. In this case we believe that it will be set by LNG. However, the price of LNG will likely be different in different seasons. Our NBP forecasts are in line with the curve through 2016 although we see excess LNG helping to even out seasonal variation. We are higher than the curve through 2017 on higher oil prices but are broadly in line with the curve on long-term as the effect of US exports becomes ever more important. The divergence between spot and oil-linked has closed recently, meaning that import prices are correlating quite close to both. We are seeing big movements in monthly imports of Russian gas, Norwegian gas and LNG as consumer-arbitrage timing differences.

For most of the year we expect LNG prices into Europe to be set by delivered US exports. This is because while we don't forecast the global LNG market to be disastrously over-supplied, it is likely to be softer, and in combination with lower oil prices the incentive among suppliers out of the US Gulf Coast will be to deliver into Europe and not Asia. We can see reasons why the market might tighten in the first quarter of each year, which represents the highest quarter for consumption in both Europe and Asia. At this point we include some impact from residual oil-linked long-term supply contracts and/or Asian LNG oil-linked netback prices for delivery out of the Atlantic Basin. Overall cost to the European consumer will be linked to the hub price and not the oil-indexed price as the vast majority of supply contracts reflect this structure. The effect is clear in the German border price, which has now effectively moved from correlating closely with the former to correlating with the latter.

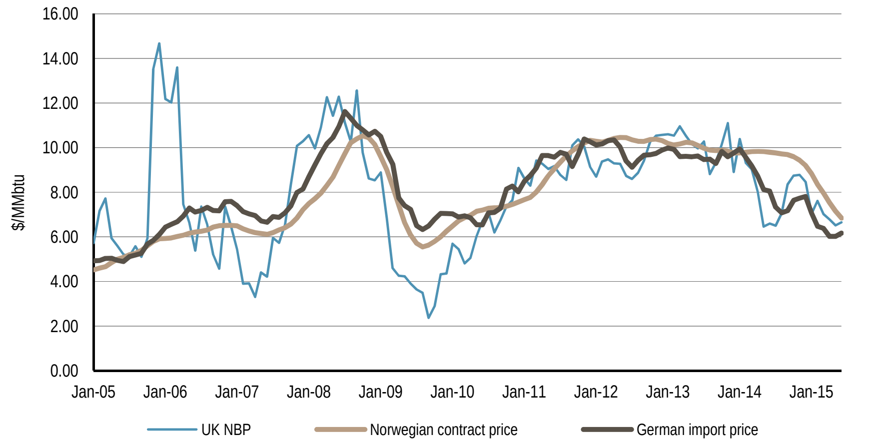
In the latter part of the last decade, post the US shale gas revolution but prior to Fukushima, the downside risk to European natgas pricing was a netback from Henry Hub less the lower cost of delivering Qatari LNG to Europe versus delivering to the US. In the period since Fukushima, marginal prices of LNG have referenced a netback of Atlantic Basin LNG to Asia. In the remainder of the decade the downside price risk to European natgas prices is likely to be the cash cost of US LNG exports (i.e. the sourcing of US natgas – Henry Hub plus a small premium) plus the cost of transport to Europe (assuming that liquefaction is essentially a sunk cost). At $4 Henry Hub this equates to ~$8/Mbtu or 50p-55pp/therm.

Figure 85: European spot price forecast versus fwd curve



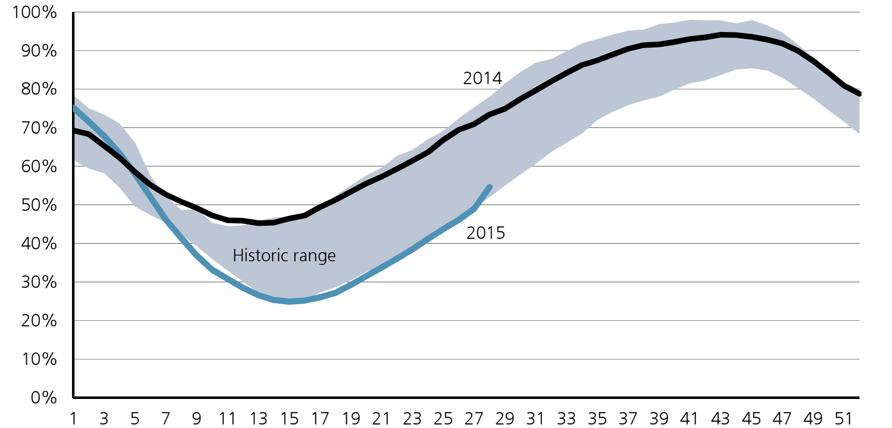
Source: UBS

Figure 86: German import pricing versus oil-linked contract price and spot



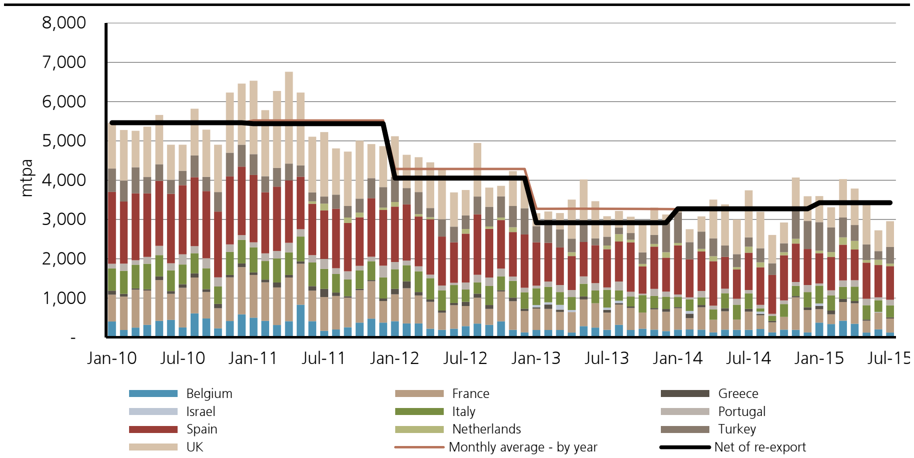
Source: UBS, BAFA

Figure 87: European natural gas in storage



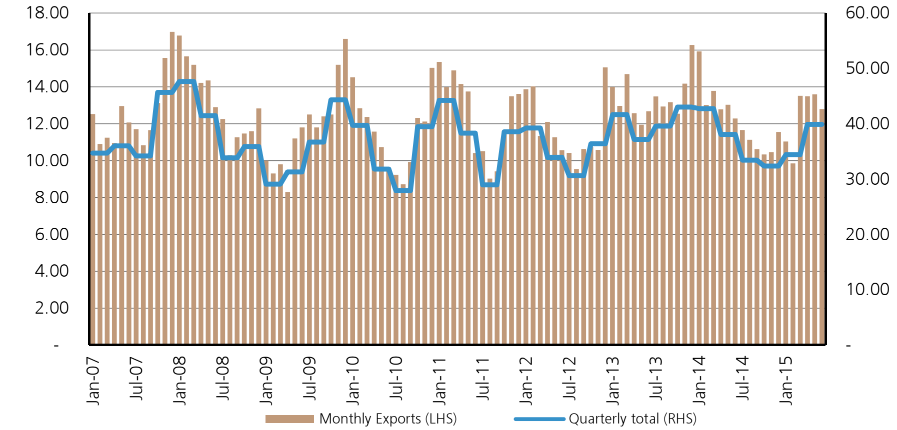
Source: UBS, Datastream, Platts

Figure 88: LNG delivered into Europe by destination



Source: UBS, IHS Waterborne

Figure 89: Russian gas imports into Europe

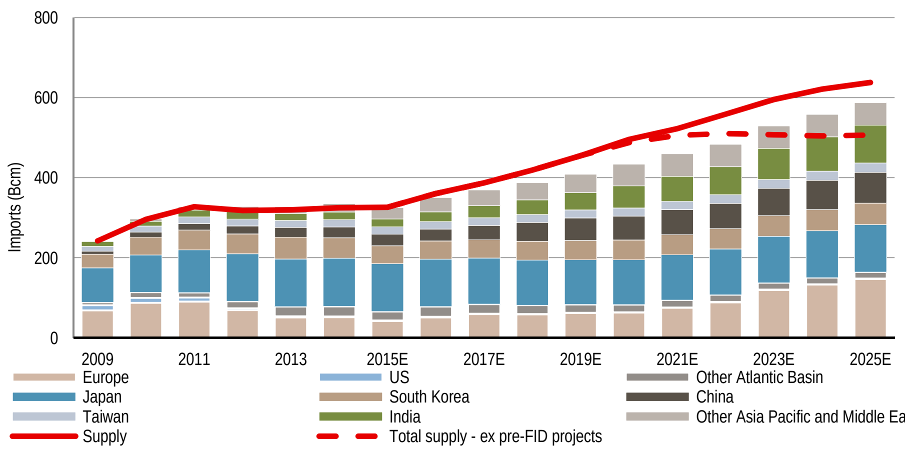


Source: Gazprom, UBS

Global LNG market

After a dearth of new start-ups in the LNG market, the pace of new supply is picking up. 2014 witnessed only one new start-up with ExxonMobil's PNG LNG; and 2013 none at all. 2015 has seen BG's QCLNG begin production at the start of the year and DS LNG (Indonesia) shipped its first cargo in August. We expect late 2015/2016 to see a surge of new supply with above-trend capacity growth until ~2019. Allied to the prospect of the return of nuclear power in Japan, LNG's largest market, and an apparent slowdown in China, this has led to some dire prognostications for global LNG.

Figure 90: Supply/demand balance for global LNG to 2025



Source: UBS

Our view can be summarised as:

- We expect the industry to add 133Mtpa of net production capacity between 2015 and 2020. This represents a growth rate of 9% per annum versus a compound annual growth rate in the market for the past 10 years of 6%, and for the period 2000-2010 of 8%. All but 7Mtpa of this new capacity has been sanctioned and is under construction.

- This surge in capacity growth comes at a time when we expect the largest market for LNG, Japan, to contract as it brings back a number of the nuclear reactors closed since the Fukushima disaster. Additionally, there are growing concerns that China's demand growth is likely to be materially slower over the next 2-3 years, while South Korea, an important player especially in the shorter-term markets, is also substituting out of gas for electricity generation purposes.

- All things being equal, we see a potential 'over-supply' situation of ~60Bcm (or 15% of the LNG market, or approximately 5% of the internationally traded market for gas) by 2020 before any slowdown in new supply acts to bring the market back into balance. In reality, the market needs to clear, however. Past experience suggests that the timing of this new capacity coming onstream on time is at risk, but in any event it still implies a very much looser market than has been the case in the past five years.

- We believe it is already clear that the fall in oil and gas prices is likely to prompt another famine of new projects. This compounds LNG market specific effects. There are over 100Mtpa of projects in FEED currently, with a multiple of that figure identifiable as potential projects. This will deal with the post-2020 situation especially as new developers will seek to secure a high proportion of contracted offtake.

- Although a very significant fall in spot LNG prices is routinely cited as evidence of the weakness of the LNG market, it currently broadly maps the fall in oil prices – no surprise, given that this is the primary pricing mechanism.

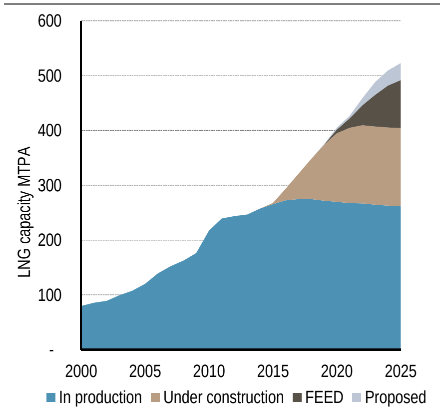
- A key development to watch will be the emergence of new demand. Projections of demand for the next decade are primarily run off measures of consumption. We think it is reasonable to conclude that demand in the past 3-4 years has been choked off by an absence of new supply and high prices. More supply and lower prices may see hitherto unrecognised demand become apparent either in existing markets (such as India for instance) or new markets (enabled by the rapidly growing FSRU market).

- US supply represents a potentially disruptive influence on the market. Not only is the pricing mechanism different but it has introduced a new generation of LNG capacity owners whose behaviour may be different to the rather orderly market that has existed, historically. This effect could be potentially exacerbated by a higher proportion of supply now held in 'portfolio' by upstream developers.

Supply

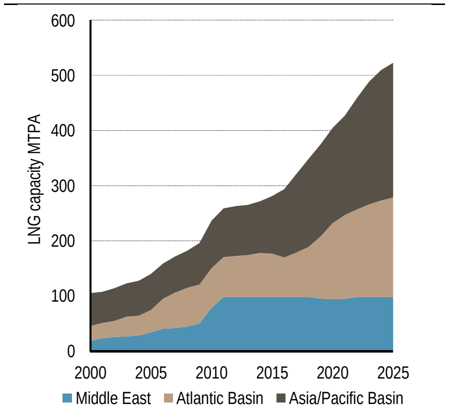
We project growth in net production capacity between the end of 2014 and 2020 of 133Mtpa. This should come largely from Australia and the US and is all under construction. It is not unusual for new capacity to be added in new chunks leading to something of feast and famine for the industry. The last large wave of new capacity to be added, the Qatari meg-projects around the end of the last decade, were soaked up by Japan post-Fukushima and by strong Asian demand more generally. It remains to be seen how this next wave will be dealt with.

Figure 91: LNG capacity by status



Source: UBS

Figure 92: LNG capacity by geography



Source: UBS

- **Atlantic Basin:** The primary source of new supply in the Atlantic Basin will be the US. Only one project, Sabine Pass, is under construction currently. At this time last year, one project – Sabine Pass 1-4 – was under construction. Since then Freeport and Cameron have started, as well as the T5 expansion at Sabine, and two trains at Cheniere's Corpus Christi project (sanction of T3 was held back awaiting further offtake contracting).

  Where we have been surprised has been the continued sanction of US export facilities in 2015 into what is clearly an over-supplied market, with the added complication that the fall in oil prices has made the relative value trade between Henry Hub and oil-linked LNG less obvious. The sanction of Sabine Pass T5 (sold to Total and Centrica with 0.8Mtpa left unsold) in June 2015 and Corpus Christi T1-2 in May 2015 (1Mtpa unsold with the remainder sold to European utilities) when the risks around the market have become even clearer has left us scratching our heads. These two sanctions alone added 13.5Mtpa of new supply, an appreciable proportion of the projected potential over-supply to the 2020 market.

  Angola LNG is expected to restart around the end of 2015. We don't anticipate any significant progress on new or expanded Nigerian capacity, but the prospects of small-scale FLNG out of Cameroon, Equatorial Guinea or Mauritania could find a niche.

- **Middle East supply:** We don't expect any new Middle East supply, with the exception of some production out of Israel (likely via empty Egyptian plants or via an FLNG system). Eventually there may be some de-bottlenecking in Qatar, but this is currently not planned and the North Field moratorium remains in place. With sanctions potentially lifting on Iran, old South Pars (Iran's name for the North Field) may be resurrected but will be dependent upon the availability of US technology and of course the commercial terms on offer (a major sticking point even before the sanctions regime was put in place). Over time, we expect exports from Abu Dhabi and Oman to dwindle.

- **Asia Pacific supply:** Outside of the US the main slugs of new LNG supply should come East of Suez. PNG LNG started up production in April 2014 and QCLNG at the beginning of 2015, heralding a wave of Australian capacity. QCLNG will be followed in Queensland by two further CBM-LNG projects, the Santos-operated Gladstone LNG (3Q15) and APLNG (towards the end of 2015). These will be supplemented by the start-up of Chevron's two conventional LNG projects in Western Australia, Gorgon at around the turn of this year and Wheatstone in 2017, likely sandwiching Shell's Prelude FLNG and Inpex/Total's Icthys. We expect Shell to consolidate its acreage with QCLNG in the aftermath of the proposed merger of the two companies and hence raise the prospect of a relatively efficient brownfield expansion (this may be subject to any resolutions emerging out of the Australian anti-trust review). Woodside has taken the long proposed Browse project into FEED this year with the

new development scenario one of partner Shell's floating LNG technology. We think this suits Shell's purposes and positioning amid the BG merger review and although final investment decision is scheduled for 2016, this could well slip in the context of current market conditions. Other historically proposed projects, Bonaparte, Greater Sunrise, Scarborough, Pluto expansion, etc, all have issues (project sponsors, politics, market, resource), which mean that in this market they just don't look likely (Australian cost and labour issues are likely not encouraging to investors either).

Outside of Australia there are some smaller projects in the SE Asia region. Indonesia's Donggi Senoro started up in August 2015. Other smaller-scale projects and expansions are due to be developed, although much of this supply is for domestic use around Indonesia and Malaysia. We expect an FID on a third train at Tangguh likely in 2015. We are sceptical about either new-build or LNG expansion in the Russian east. An expansion of Exxon's PNG LNG to a third train seems to be a clear opportunity and we include that in our forecasts, while Interoil/Total's Gulf LNG (formerly Elk Antelope), also in PNG, looks a good bet for post 2020. Around 2020, the big new supply source is likely to be East Africa. Eni is anticipating sanctioning its Coral FLNG project, offshore Mozambique, in 2H15 while both Eni and Anadarko expect to sanction their respective first phases of the onshore trains at Afungi in mid-2016 (although the scale of these might mean concluding appropriate offtake agreements could lead to a delay. Tanzania won't come onstream after 2020 as the partners negotiate the above-ground challenges and take their time to develop a good project – the sponsors are top quartile.

While there are many attractions to developing Canadian export – Pacific location, stable politically, stranded gas – we are cautious. British Columbia does not have a large labour pool, there are local land issues, especially with the pipelines, and there is some danger concerning the attempt to build multiple projects (some consolidation is probably needed to avoid the same issues encountered in Queensland and that should slow things down). Furthermore, the Canadian projects continue to appear to be in the cross-hairs of the differing pricing needs/requirements of suppliers seeking oil indexation and Asian buyers looking for something else. We include Petronas' Pacific NW project in our pre-2025 start-ups because we believe that some form of project will emerge in that time frame and currently this appears the most advanced.

Figure 93: LNG projects currently under construction

Region/country	Project	Operator	Start-up	Capacity (Mtpa)
Atlantic Basin				
Angola	Angola LNG	Chevron	2015	5.2
Russia	Yamal	Novatek	2019	16.5
United States	Sabine Pass 1-2	Cheniere	2016	9.0
United States	Sabine Pass 3-4	Cheniere	2017	9.0
United States	Sabine Pass 5	Cheniere	2018	4.5
United States	Elba Island Phase 1		2018	1.5
United States	Elba Island Phase 2		2018	1.0
United States	Freeport		2019	9.2
United States	Freeport 2		2020	4.6
United States	Cameron LNG Tr 1-3		2018	12.0
United States	Cove Point		2019	5.3
United States	Corpus Christi Tr1-2		2019	9.0
				86.8
Asia Pacific				
Indonesia	Sengkang LNG	Pertamina	2015	2
Malaysia	MLNG T9	Petronas	2017	3.6
Malaysia	PFLNG 1	Petronas	2016	1.2
Malaysia	PFLNG 2	Petronas	2018	1.5
Australia	Gorgon	Chevron	2015	15
Australia	Ichthys	Inpex	2017	8.4
Australia	Wheatstone	Chevron	2017	8.9
Australia	Gladstone LNG		2015	7.8
Australia	AP LNG		2015	9
Australia	Prelude FLNG	Shell	2017	3.6
				61
				147.8

Source: UBS

Figure 94: List of other notable future potential projects not yet sanctioned

Region/country	Project		Operator	Start-up	Capacity (Mtpa)	Commentary
Atlantic Basin						
Nigeria	NLNGSeven	FEED	Shell	n/a	8.00	Not featured in Shell's most recent capital investment plan.
Nigeria	Brass LNG	FEED	NNPC/ENI/COP/TOT	n/a	10.00	Longstanding prposal but like NLNG7 unlikely to screen well in current market conditions
Cameroon	GoFLNG	Proposed	Perenco/Golar	2019	2.40	Would use first small-scale off-the-shelf FLNG supplied by Golar (vessel under conversion currently)
Equatorial Guinea	EG FLNG	Proposed	Ophir	2020	2.20	Proposed small-scale FLNG akin to GoFLNG in Cameroon
United States	Lake Charles	FEED	BG	2023	7.80	Previously one of BG's LNG options. May be delayed amid high activity on Gulf coast and Shell/BG options
United States	Cameron LNG Tr 4-5	Proposed	Sempra	n/a	9.97	Potential expansion. May prove competitive vs Lake Charles but similarly subject to market conditions.
United States	Corpus Christi Tr3	Proposed	Cheniere	2021	4.50	Original Corpus Christi development envisages 3 trains, with T1&" sanctioned in May 2015
United States	Magnolia LNG	Proposed	LNG ltd	n/a	8.00	
United States	Golden Pass	Proposed	XOM/QPC	n/a	15.6	Awaiting FERC and DoE approvals
United States	Delfin LNG	Proposed	Fairwood	n/a	8	
Asia Pacific						
Indonesia	Tangguh Tr 3	FEED	BP	2020	3.8	Likely brownfiield expansion to Tangguh and we expect FID in 2016
Indonesia	Abadi - FLNG	FEED	Inpex	2022	2.5	Being re-worked with Shell but likely delay to FID although project size likely upscaled
Australia	Pluto 2	Proposed	Woodside	n/a	4.3	Expansion has been long considered but requires further exploration success to underpin
Australia	Browse	FEED	Woodside	2022	10.8	Entered FEED in 2015 partly we suspect to show Shell's commitment to Australian LNG
Australia	Greater Sunrise	Proposed	Woodside	n/a	4.8	Potential FLNG solution but mired in politics between Australia and Timor Leste
Australia	Gorgon 4	Proposed	Chevron	2022	5	T4 expansion under consideration but likely delayed while base project is delivered
Australia	Wheatstone Tr 3	Proposed	Chevron	n/a	4.5	Mooted expansion project but not likely an FID in the forseeable future
Australia	QCLNG T3	Proposed	BG	n/a	4.25	Not a live project currently but a reasonable expectation when Shell and BG merge
Australia	Scarborough FLNG	Proposed	BHP/XOM	n/a	6.0	FEED delayed.
Australia	Bonaparte FLNG	Proposed	Engie	n/a	2.0	Formerly an FLNG project but now being looked at as a possible tie-back
PNG	PNG LNG (Juha, Hides) T3	FEED	ExxonMobil	2020	3.3	Obvious brownfield expansion. Sanction due before end-2017 under government MOU
PNG	Gulf LNG	Proposed	Total	2022	3.8	One of Total's 3 'live' upstream projects. May end up as an expansion train in PNG LNG
United States	Alaska LNG	Proposed	ExxonMobil	n/a	10.0	Clear opportunity for large North Slope gas reserves but significant investment required
Canada	Pacific Northwest LNG	FEED	Petronas	2020	7.8	HOAs for majority of offtake and 'conditional FID' taken but costs/environmental challenges remain
Canada	Kitimat	FEED	Chevron	n/a	10.0	If Canada is to avoid a 'Queensland' situation then likely this ultimately is combined with other projects
Canada	LNG Canada	FEED	Shell	2022	12	Next decision gate 2016. May stand better chance in light of BG/Shell merger but still a way off. Maybe merged
Canada	Douglas Channel LNG	FEED	BC LNG cooperative	2020	0.55	FID in 4Q15 with 2018 start-up planned but we assume this is pushed back. Floating technology simplifies project.
Canada	Prince Rupert	FEED	BG	n/a	14	On hold and likely consoldiated with Shell plans, ultimately
Canada	WCC LNG	Proposed	XOM	n/a	10	
Canada	Woodfibre	Proposed	Pacific Oil & Gas	n/a	2.1	

Canada	Aurora LNG	Proposed	CNOOC	n/a	6	
Canada	Grassy Point LNG	Proposed	Woodside	n/a	10	
Canada	Kitsault	Proposed	Kitsault Energy	n/a	5	
Canada	Steelhead LNG	Proposed	Steelhead LNG	n/a	12	
Russia	Sakhalin II exp.	FEED	Gazprom	n/a	4.8	Brownfield expansion and most likely of new Russian capacity but hindered by sanctions and feed gas availability
Mozambique	Coral FLNG	FEED	Eni	2019	2.5	FID targeted for 2H 2015
Mozambique	Mozambique LNG Ph 1	FEED	Anadarko	2021	12	FID targeted for mid-2016
Mozambique	Mozambique LNG Ph 2	FEED	Eni	2022	12	FID targeted for mid-2017
Mozambique	Mozambique LNG Ph 3	Proposed	Anadarko	2025	12	Follow-on expansion
Mozambique	Mozambique LNG Ph 4	Proposed	Eni	n/a	12	Follow-on expansion
Tanzania	Tanzania LNG	Proposed	BG/Statoil	2022	5.5	Partners working up project and we expect FEED in 2016 or 2017
Middle East						
Iran	Pars LNG/Iran LNG/Persian LNG et al	Suspended	NIOC	n/a	N/A	Multiple development stages of South Pars. Suspended on account of sanctions and commercial terms.
Israel	Leviathan LNG T1			2021	5.5	Phase 1 development of Leviathan proposes tie-in to idle Egyptian LNG plants

Source: Source: UBS

Consumption and demand

Because there is latency in demand it is more accurate to talk about LNG consumption rather than demand when looking at historical data. In particular, the dearth of new supply in the past 3-4 years has meant the market has been supply constrained. Combined with high prices we believe this implies there is unmet demand for available more competitively priced gas.

In 2015 year to end-July, consumption of LNG is up 2% y/y. This comes after 2013 of +1% and 2012 of -2%.

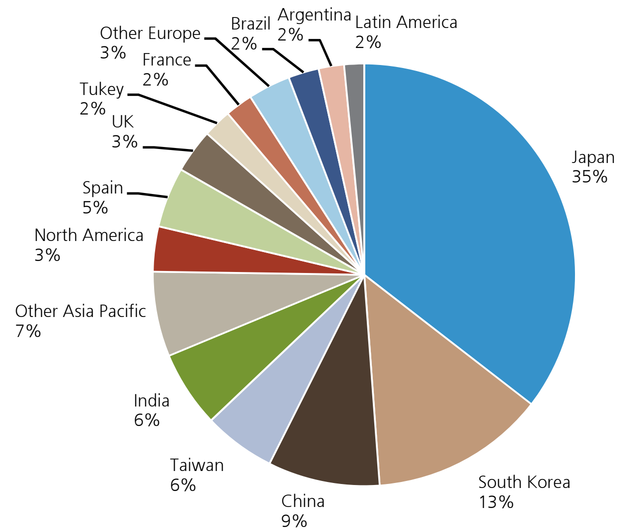
Regionally this splits with Asia flat, Latin America down 3%, Europe up 17% and North America now negligible. In Asia, Japan (-1.4% ytd) is now coming off its post Fukushima demand spurt and the restart of the first nuclear reactor, Kyushu Electric's Sendai 1 started in August. We incorporate a restart of 25 mainly more modern PWR reactors of the country's 43 between now and 2020, pushing out a combination of coal, fuel oil, crude oil and LNG. South Korea has started up new coal and nuclear generation, resulting in imports down 6% in 2014 and down 12% in 2015 ytd. Until 2014, China was seen as the next leg in the Asian demand growth story, but the slowdown in the domestic economy, some odd domestic pricing arrangements and competition from pipeline imports (nothwithstanding rather disappointing domestic production growth) leaves China looking possibly over-contracted in the short term, as opposed to a likely spot market participator previously.

Balancing this somewhat gloomy story in Asia, lower pricing looks to be prompting increased Indian demand, although import capacity may act as something of a constraint to import growth. In addition new pockets of consumption are emerging, such as Singapore, as well as Jordan, Pakistan, etc, which are beneficiaries of floating regas technology as well the more disaggregated nature of new supply.

Latin America has been a surprise package over the past few years taking up much of the slack from Europe. However there remains some doubt over the sustaining nature of some of this demand with a portion of Brazilian consumption driven by thermoelectric power generation substituting for hydroelectric during the extended drought in the country (now easing somewhat), while one might reasonably expect Argentina to address its own domestic production bottlenecks and reduce the need for expensive imports.

Europe is a slow demand growth market, as we discuss above, but LNG will play a part in meeting the growing gap between consumption and domestic production over the next decade. Furthermore, imports into Europe may be a function of 'push' rather than 'pull' if the global market finds itself long supply and is seeking a buyer of last resort.

Figure 95: Global LNG demand by main consuming country/region (2014)



Source: UBS, BP Statistical Review of World Energy

Our forecasts over the decade to 2023 project demand growth of 6% CAGR, in line with what we see as being trend market growth (and in line with the 10 years to 2015) but below the 8-9% recorded in the opening decade of the century. We think demand growth of ~5% per annum is where consensus sits. Our outlook projects a demand figure for 2019 of 412Bcm versus the IEA at 450Bcm, with the difference being our lower Japanese demand figure (20Bcm) and Europe (30Bcm). These two effects (primarily the more bearish view of Europe) account for a lower (40Bcm) 2020 European import figure vs 2013.

LNG pricing

LNG is a capital-intense, long-term business. The gas purchased is delivered into long-term assets such as power stations and domestic distribution networks. Consequently some security of market and security of supply and visibility on price is needed for both developer and producer.

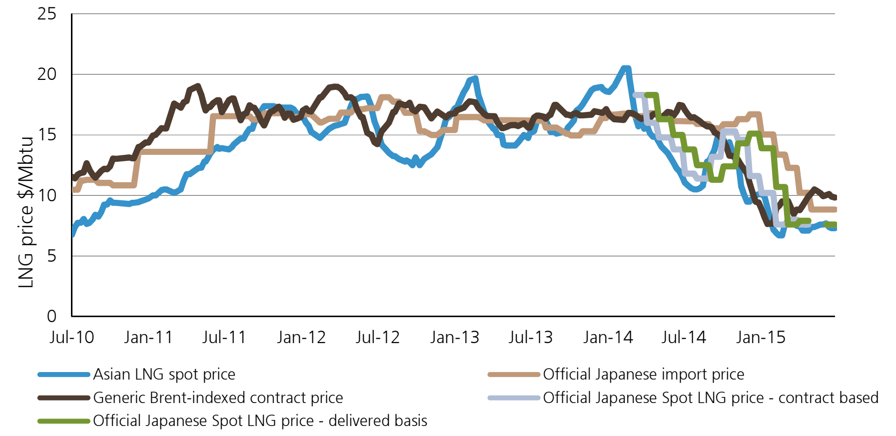
There are good reasons why oil-indexed pricing for LNG became the dominant contractual pricing term. To a large extent natural gas in the form of LNG was used in the 1970s by Japan to replace crude oil burning power generation. Crude indexation also suited developers who could see many of their costs being linked to crude price development and who felt comfortable in planning using crude oil price forecasting.

A typical Asian LNG contract has historically been 'S' shaped with a guaranteed floor to protect the developer, a ceiling to protect the buyer and a price slope indexed to crude oil price movements. The exact pricing terms agreed are often a function of the state of the market when they are negotiated, and generally confidential. Contracts concluded in the early to middle of the last decade tended to favour the buyer. Contracts concluded after 2011 and the Fukushima disaster put Japan, in particular, under considerable pricing strain. Asian buyers are seeking to address these very high energy costs in the following ways:

- They are looking to source increasing LNG from the US. In this regard they need to be a little careful and will be wary of the political risk that comes with relying on this supply.
- Re-negotiate new pricing structures. This is facilitated by contract re-openers that are a common feature of these long-term contracts. Previously, it was an obvious move to ask for some Henry Hub indexation, but with the recent fall in crude oil prices this change is not so obviously attractive.
- They will look to vertically integrate further upstream (a pattern that has been increasingly prevalent).

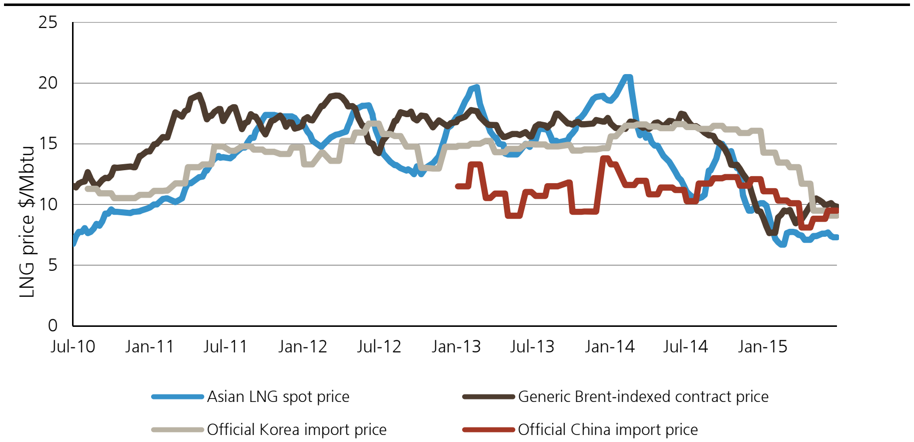
Also to be borne in mind is that Asian LNG importers in particular rely on a combination of spot and contract supply, with contract supply varying in price depending on age of contract, duration, original date of agreement etc. As a consequence, not only will the existing contract structure vary with the indexing but the portion of spot (~20% of total volumes are sold on spot or shorter-term contracts) will vary with market conditions. Thus the pattern in the charts below is clear – average import prices are below spot prices in a tight market and vice versa.

Figure 96: Comparison of Japanese LNG import prices and Asian LNG prices



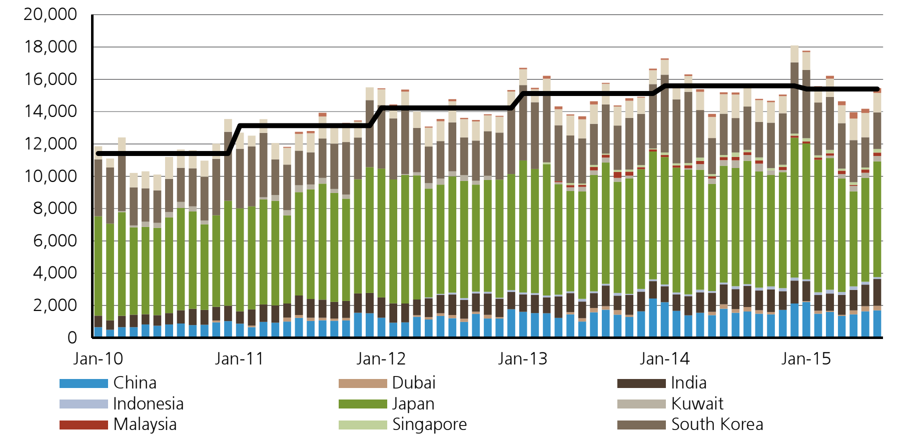
Source: UBS, Reuters

Figure 97: Comparison of Korean and Chinese LNG import prices and spot LNG prices



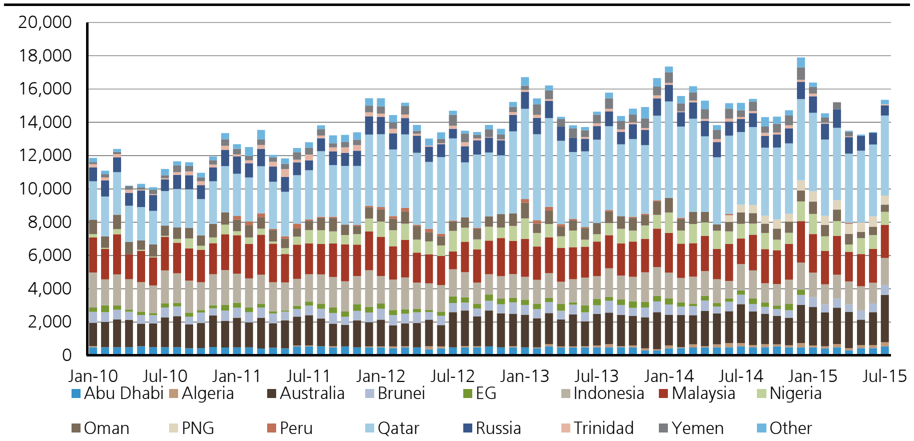
Source: UBS, Reuters

Figure 98: Monthly Asian LNG deliveries by region of destination



Source: UBS, Waterborne

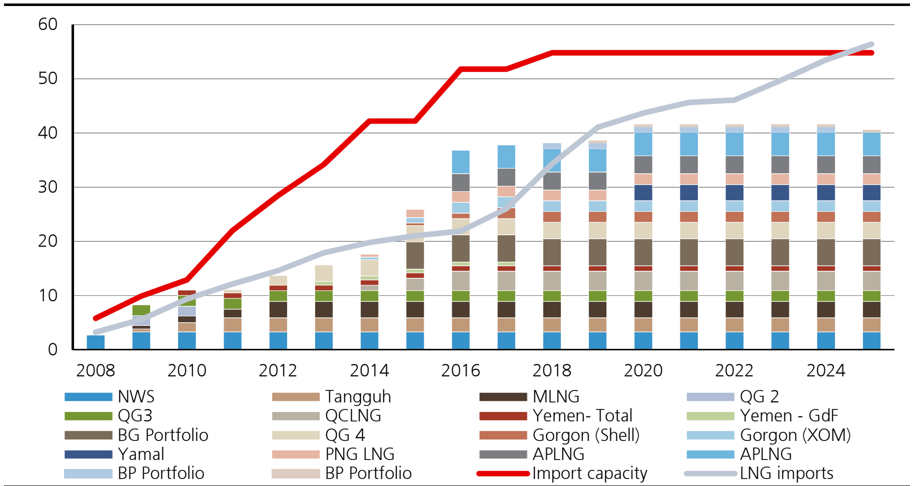
Figure 99: Monthly Asian LNG deliveries by country of origin



Source: Waterborne, UBS

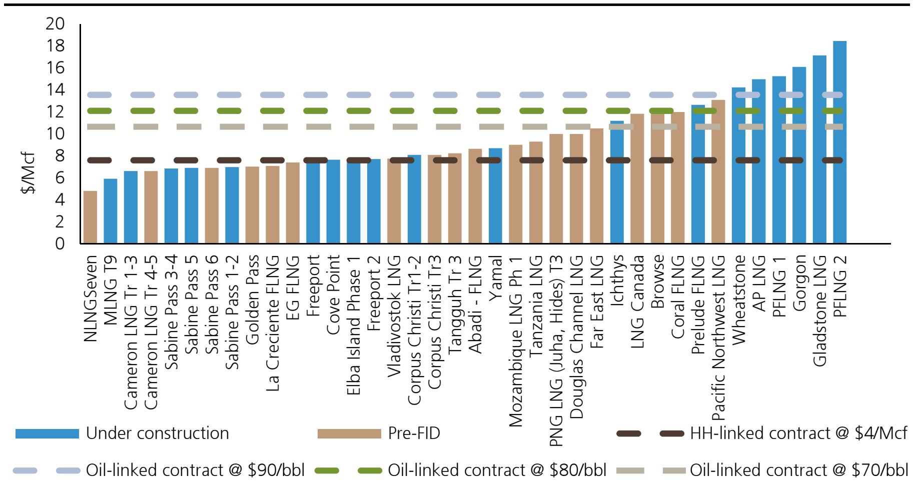
Using US exports based on a $4/Mbtu US natural gas netback– our 2018 forecast and according to a year by which time the scale of US exports could impact global pricing, we calculate a downside risk to Asian prices versus current contract structures at a 14% oil-indexed slope of ~$1/Mbtu. We see this level of spread as not obviously material enough to foster a structural change in Asian pricing.

Figure 100: Chinese LNG import projections vs regas capacity and LT contracts (Mtpa)



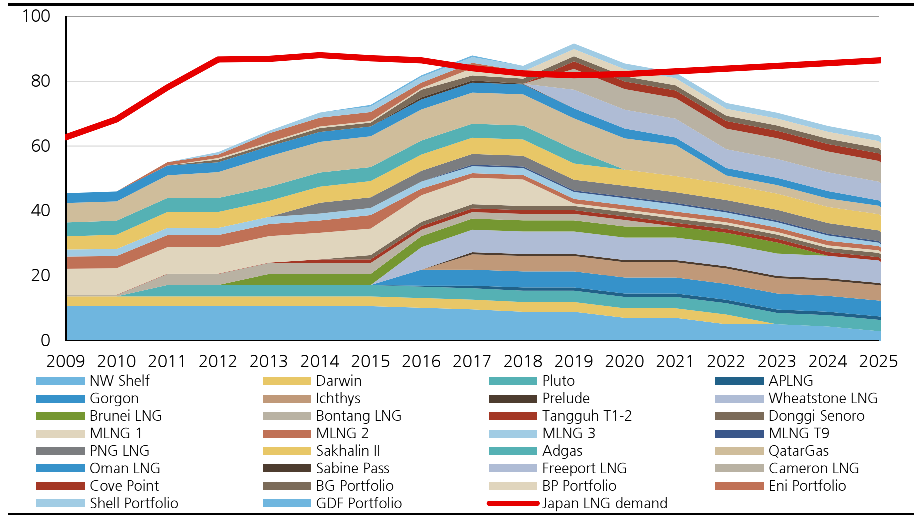
Source: UBS

Figure 101: LNG capacity under construction and selected pre-FID projects: full cycle breakeven ($/Mbtu FOB) at 12% discount rate vs generic contract prices



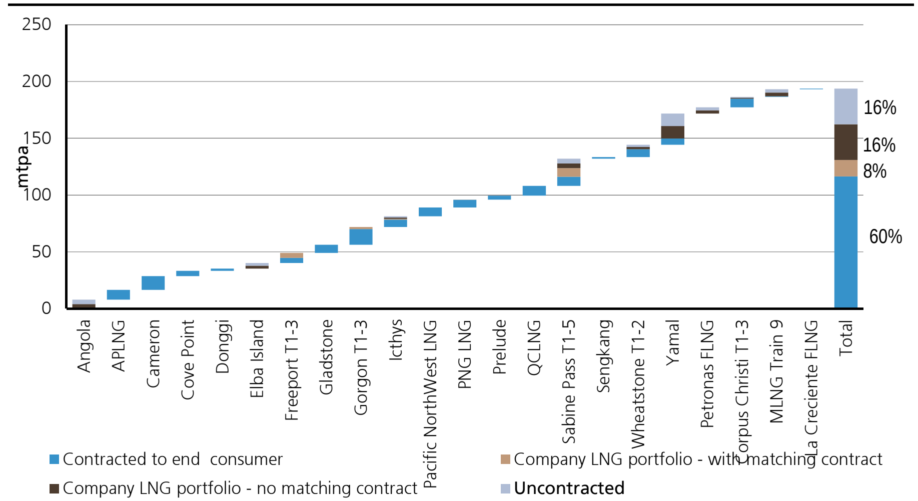
Source: UBS estimates, WoodMackenzie

Figure 102: Japanese LNG imports – contracted status (Mtpa)



Source: UBS, GIIGNL, WoodMackenzie, Company Data

Figure 103: LNG liquefaction capacity under construction – supply contract status



Source: UBS, GIIGNL, WoodMackenzie, Company Data

Global Downstream Markets

Refining Markets

Figure 104: Refining margins forecasts

$/bbl	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
European composite margin	$4.99	$2.06	$2.70	$6.43	$4.76	$3.90	$3.28	$2.68
Previous				*$5.56*	*$3.53*	*$2.89*	*$2.31*	*$2.31*
US Gulf Coast 3-2-1 LLS	$9.37	$8.41	$10.78	$14.23	$11.50	$11.50	$10.00	$9.00
Previous				*$12.23*	*$9.00*	*$9.00*	*$9.00*	*$9.00*
US East Coast 2-1-1 Brent	$13.82	$12.97	$14.84	$16.51	$13.50	$12.00	$10.00	$9.00
Previous				*$14.51*	*$11.00*	*$9.00*	*$8.50*	*$8.50*
US West Coast 3-2-1 ANS	$17.72	$17.91	$15.57	$27.04	$19.00	$17.00	$16.00	$15.00
Previous				*$20.54*	*$14.50*	*$14.25*	*$14.25*	*$14.25*
US Mid Cont 3-2-1 WTI	$27.78	$23.08	$16.23	$20.12	$18.50	$17.00	$16.00	$16.00
Previous				*$17.62*	*$16.00*	*$16.00*	*$16.00*	*$16.00*
Singapore complex	$7.49	$6.18	$5.77	$7.04	$5.70	$5.20	$5.00	$5.00
Previous				*$7.04*	*$5.70*	*$5.20*	*$5.00*	*$5.00*

Source: UBS estimates

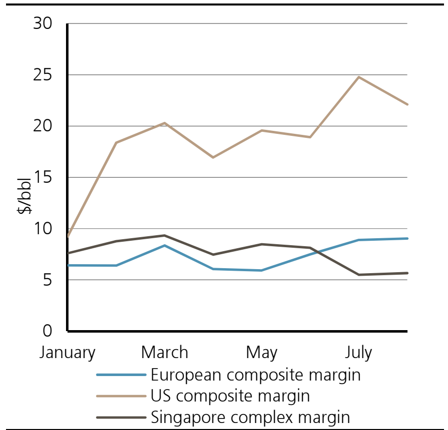
Refining markets have experienced a remarkable turnaround over the past 12 months, a period dubbed a "mini golden age", in reference to the glory days of the mid-2000s. Europe, the most leveraged region to improvements in the macro outlook, has seen its composite rise by 5 times y/y YTD. In the mid-2000s, fast growing oil demand and limited capacity additions drove margins to record highs. The steep fall in the oil price has been the main driver this time, spurring stronger demand growth but also appearing to cut into the capital budgets available for new capacity. We see net capacity additions down by 3.3Mbpd over 2015-17 compared to last year and demand is up by 0.1Mbpd by 2017. We expect that strength to continue in the short to medium-term as oil demand continues to grow at a good pace and capacity additions remain relatively limited over 2015-17. The long-term headwinds of increased efficiencies and renewables diversification have not disappeared, however, and there are still a large number of new projects from 2018, which should contribute to keeping margins under pressure globally.

We have raised our European and US refining margin forecasts, more materially over 2015-17, by 28% or $1.0/bbl in Europe and 21% or $2.7/bbl in the US, to reflect the lower oil price, stronger oil demand growth and project delays and cancellations. Margins are up more modestly over 2018-19 ($0.7/bbl in Europe, $0.6/bbl in the US) as meaningful capacity additions still look likely. We have left our Singapore margin forecasts unchanged.

2015 review

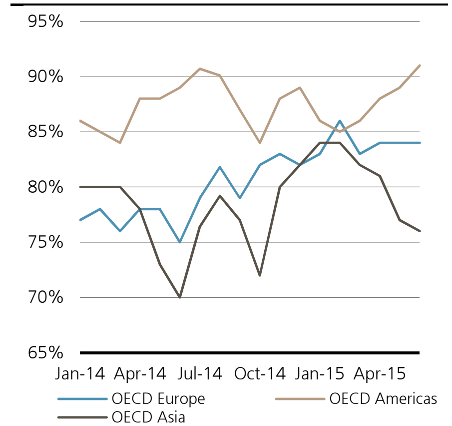
It has been a very good year for Refining so far. Year to date our European composite margin has averaged $7.39/bbl, 5 times higher y/y; our US composite margin $18.83/bbl, up 35% y/y; and the Singapore GRM $7.59/bbl, up 38% y/y. We expect global oil demand to grow at 1.7Mbd in 2015, up from just 0.7Mbd. Capacity additions have remained relatively limited at 1.2Mbd, which has reversed the steady increase in spare capacity of recent years. Utilisation rates have jumped in all regions to meet that additional demand and take advantage of lower crude prices.

Figure 105: Refining margins in 2015



Source: UBS, Bloomberg, DataStream

Figure 106: Utilisation rates



Source: IEA

Margins have remained very strong for most of the year in all regions. The maintenance season provided some welcome support to US margins in February. Margins were hit by the rebound in oil price in April, which was offset by maintenance in Europe and APAC. We expected margins to dip in June as capacity came back on stream, but strong gasoline demand as the driving season got under way actually carried margins higher. This was felt more acutely in the Atlantic Basin thanks to strong US demand and outages in the region, whereas at the same time capacity came back on stream in Asia and the new refineries in the Middle East started exporting products, hitting Singapore margins. US refiners continued to enjoy the highest margins as the demand response was strongest in that region.

It has been a relatively slow year for capacity additions. Yanbu (400kb/d, Saudi Arabia, in December 2014) and Ruwais II (417kb/d, UAE, in February) are the main additions of the past twelve months. Yanbu started exporting diesel around June but Ruwais has run into difficulties starting some units and is still in ramp-up phase. The only other large new refinery is Paradip (300kb/d, India), which tested units in April and is expected to start commissioning in September. There have been few projects beyond these, with notably limited additions in China. Closures continue to take place, although the very high refining margins did lead to delays in the majors' plans (TOTAL's La Mede and Lindsey refineries only reducing capacity next year; Eni has not updated on its plans for the Taranto and Livorno refineries). There was still one closure in Europe (Tamoil's 55kb/d Collombey refinery in Switzerland), and Japan (Petrobras' 100kb/d Okinawa refinery) and Australia (BP's 102kb/d Bulwer Island refinery) continued to reduce their capacity.

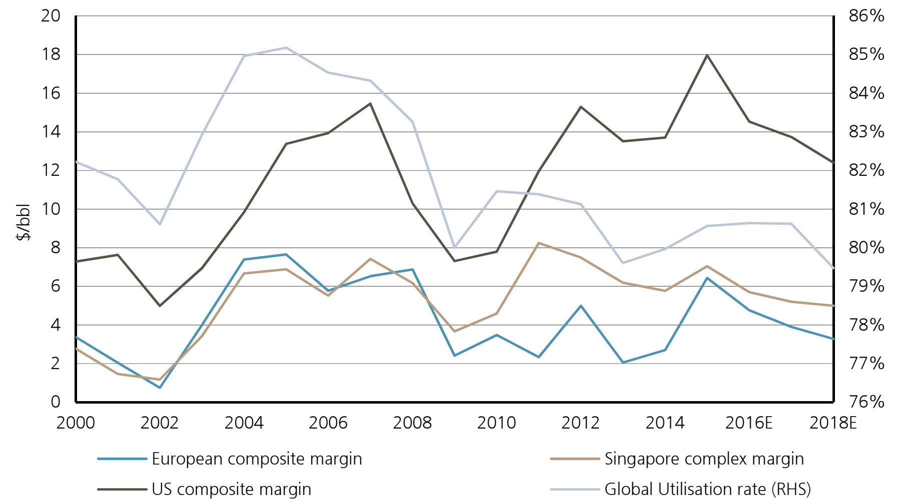
The crude oversupply was a boon for all refiners and the worst positioned saw their competitive disadvantage reduced as the price of oil fell. European refiners which rely more on fuel oil for their energy needs got the biggest boost. The Brent-WTI spread narrowed slightly but has stabilised around $5/bbl, which still provides an advantage to US refiners. Heavy-light crude differentials have remained relatively wide as producers compete for market share. Year to date Brent-WTI has averaged $5.95/bbl vs. FY14: $6.49/bbl; Brent-LLS $1.37/bbl vs. FY14: $2.89/bbl; Brent-Urals $1.14/bbl vs. FY14: $1.37/bbl; and Brent-Dubai $1.83/bbl vs. FY14: $2.39/bbl.

Margin outlook

Our view is that margins should hold up well over 2015-17 but are likely to be back under pressure around 2018. For the first time since 2010, when demand jumped on by 3.3Mb/d, global spare capacity is declining slightly this year. Combined with maintenance, outages and sharper seasonal demand spike, this gives more room for less complex refineries and leads to higher margins overall. The fall in the oil price has reduced costs for refiners but also had another positive side-effect. Cash-constrained NOCs have delayed several refining projects and the outlook for new capacity additions over 2015-17 looks much lighter now, which should give more breathing space for longer. We only see net capacity additions of 1.1Mb/d in 2016 and 1.3Mb/d in 2017 after 1.2Mb/d in 2015. We expect global oil demand to grow at 1.4Mb/d over 2015-17, which should cover the additions. From 2018, much more capacity comes on stream (2.8Mb/d) which should again put some pressure on margins.

We see the global utilisation rate remaining between 80% and 81% over 2015-17 before declining to 79% in 2018 and 78% in 2019 if there are no further closures. A strong correlation exists between crack spreads and utilisation rates and our forecasts reflect this. We expect European refiners to benefit the most on a relative basis in the medium term as they have the least complex asset base. In the longer term, they are the most vulnerable as the new and highly competitive capacity at greenfield mega-refineries comes onstream, taking away their market share. We still see US refiners as the best positioned for the long-term. We see US refining margins trending down but stabilising at relatively high levels as they maintain their competitive advantages (more complex, lower costs, crude access). Asian refiners are in between. They should in general benefit from proximity to sources of oil demand growth.

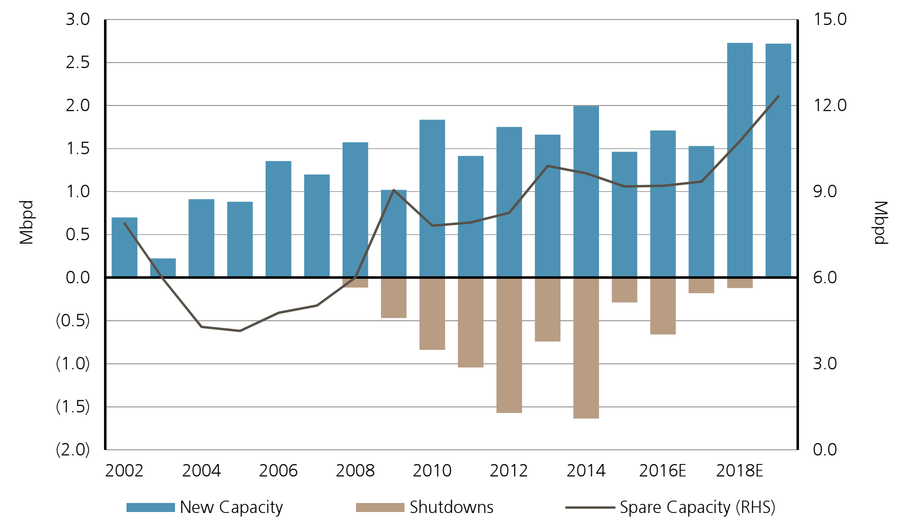
Figure 107: Refining margins vs. utilisation rates



Source: UBS estimates

Capacity additions and utilisation

Figure 108: Planned global capacity additions (mbbl/d)



Source: UBS estimates

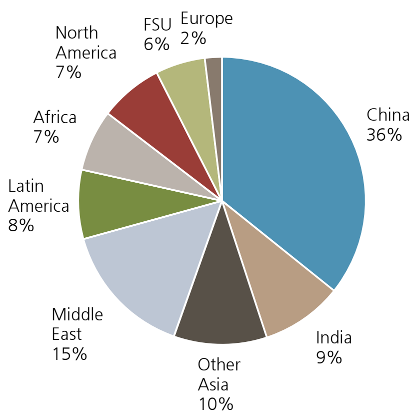
The total crude distillation global refining system currently stands at ~96Mb/d. Based on known expansions and new greenfield refineries in the period 2015-19E, we expect another ~10Mb/d of gross refinery crude distillation (CDU) capacity to be built. Net of confirmed and risked closures of 1Mb/d, this takes global CDU capacity to ~105Mb/d by 2019. This expansion will outpace oil product demand growth of 6.3Mb/d over the same period; implying surplus refining capacity is set to increase further by 2019. This is back-end loaded, however, and we expect spare capacity to remain fairly stable over 2015-17. Whilst most of the new capacity to be added globally will be in Asia-Pacific and the Middle East, oil products are generally fungible and so any refining capacity added in one corner of the world is likely to put pressure on capacity (or margins) to be reduced in another.

We see 'operable spare capacity', already sufficient at 9.2Mb/d in 2015, increasing to 12.7Mb/d by 2019 in the absence of additional closures. We therefore estimate global utilisation rates would fall to 78% in 2019E from 80.5% in 2015E (2004-07: 85.5%). As

we get closer to the start-up of new projects in 2018 and pressure increases again on margins, we would expect to see further capacity reductions in Europe, which should help limit the increase in spare capacity.

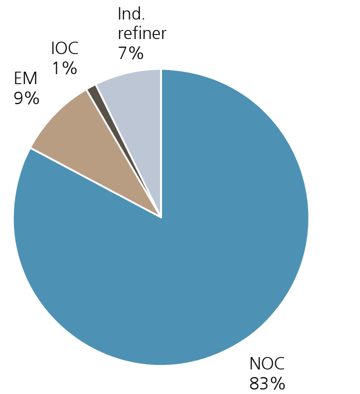
The companies involved and the geographic split of these new refining projects remains very similar compared to last year: the projects are predominantly carried out by NOCs and other Emerging Markets companies (more than 90% of the total) and additions remain focussed on Asia, which still represents more than 50% of total additions. The changes are relatively marginal: slightly less capacity in the Middle East and Latin America, slightly higher for North America and Africa. The only project in Europe remains SOCAR's 200kbpd STAR refinery in Turkey (2018).

Figure 109: Projects by country (2015-19E)



Source: UBS

Figure 110: Projects by company (2015-19E)



Source: UBS

This masks a major change in our forecasts compared to last year: we now see 3.5Mb/d less capacity coming on stream over 2015-17. The delays have been mainly as a result of the lower oil price which has pushed NOCs to cut capex. Downstream investments on which returns were sometimes doubtful have been a major target of cuts. Companies which have postponed projects for this reason include Pemex, PdVSA and Petrobras. Projects starting up in 2018-19 have also been delayed but the change is smaller (1.3Mb/d over the 2 years) as some of the 2015-17 have been delayed to 2018-19. Saudi Aramco's Jazan refinery and projects in Indonesia and China are the main contributors to the decline over 2018-19.

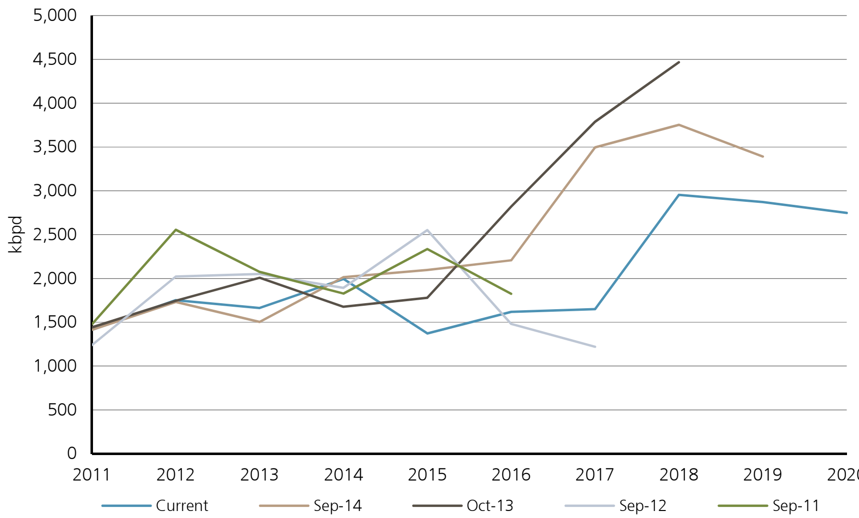
Figure 111: Major project delays and cancellations

Refinery	Country	Company	Original start-up date	New estimated start-up	Capacity	Comment
Abreu e Lima phase 2	Brazil	Petrobras	2015	2018	115	Delayed because of corruption scandal, capex cuts
Comperj phase 1	Brazil	Petrobras	2016	2020	165	Delayed because of corruption scandal, capex cuts
Jazan	Saudi Arabia	Saudi Aramco	2017	2020	400	Reportedly delayed because of technical issues
El Palito	Venezuela	PdVSA	2017	2019	140	Delayed given PdVSA's financial difficulties
Dangote	Nigeria	Dangote	2017	2019-20	650	Original timeline stretched given limited progress
Al Zour	Kuwait	KPC	2019	2020	615	Slipped because of financing delays
Barner	India	HPCL	2017	Cancelled	180	Project halted
Maranhao (Premium I)	Brazil	Petrobras	2019	Cancelled	300	Petrobras cutting capex, especially in the Downstream, post corruption scandal
Ceara (Premium II)	Brazil	Petrobras	2020	Cancelled	300	Petrobras cutting capex, especially in the Downstream, post corruption scandal
Tula	Mexico	Pemex	2019	Cancelled	250	New refinery cancelled, Pemex will only invest in an expansion of existing refinery
Batam	Indonesia	Socar	2018	Cancelled	600	Indonesia signed new MoUs for its refining projects, previous ones cancelled
Balongan II	Indonesia	PT Pertamina	2018	Cancelled	300	Indonesia signed new MoUs for its refining projects, previous ones cancelled
Bontang	Indonesia	Pertamina / KPC	2019	Cancelled	300	Indonesia signed new MoUs for its refining projects, previous ones cancelled
Khalifah	Pakistan	IPIC/PARCO	2020	Cancelled	250	Had been delayed several times
Weihai Project	China	PetroChina	2019-20	Postponed	200	Probably cancelled
Shangqiu Petchem	China	PetroChina	2019	Postponed	200	Probably cancelled

Source: UBS

Some projects remain at risk of further delays. It is notably the case in China where the NOCs are less inclined to spend large amounts on downstream investments than they used to be and growth is slowing down. So-called "teapot" refiners are also being allocated crude import quotas, which should help them run at higher rates, reducing the need for new large investments for the country.

Figure 112: Changes in UBS estimates of new refining capacity over time



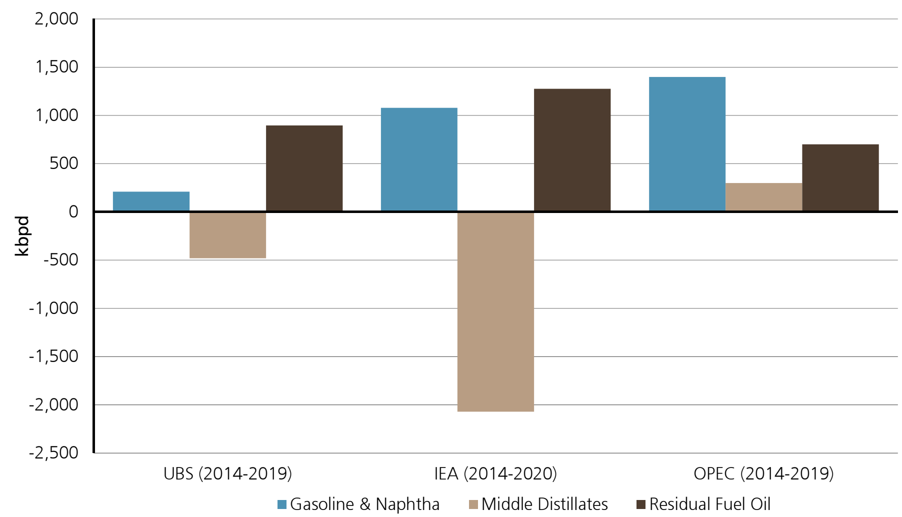
Source: UBS

The one negative side-effect of the lower oil price and higher refining margins is that refinery closures have slowed down. We think we will continue to see some closures over the next 2-3 years as TOTAL (~250kb/d), Eni (~225kb/d) and Japan (~350kb/d) have announced plans to reduce capacity. Other refiners in Europe and Asia remain vulnerable but may not feel much pressure until 2018. Political pressures and new entrants are likely to continue to slow down that process. Conversely, we think it is unlikely that we will see refineries previously shut down come back on stream. The lower oil price makes the initial working capital commitment less prohibitive but it remains a meaningful investment and most industry players keep a bearish view on the long-term.

Products balances

A key feature of the margins rally this year has been the strength in gasoline, which benefitted much more than diesel from the rebound in demand, mainly thanks to the US. Light distillates balances have improved compared to last year as we revised up our demand forecasts and postponed projects. They still show an increasing surplus over 2014-19 but this is back-end loaded. In the short-term, we expect the seasonal spike in gasoline margins to be more pronounced than usual, although refiners should be better prepared for it from next year. For middle distillates too, the balances outlook has improved vs. last year. We actually see a small deficit over 2014-19 despite the new capacity coming on stream being more geared towards middle distillates, thanks to robust demand growth.

Figure 113: Global products balances (2014-19)

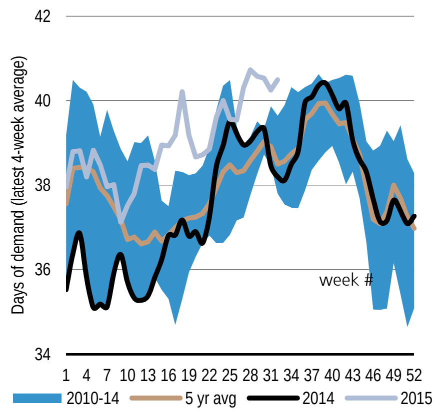


Source: UBS, IEA, OPEC

Inventories

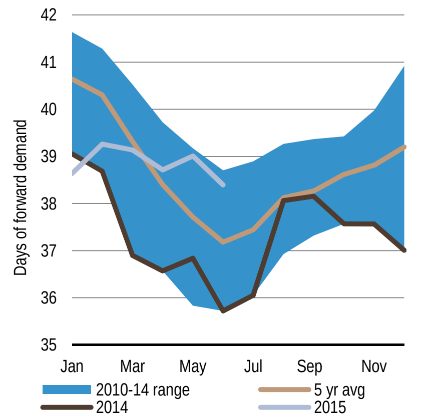
Refiners have increased their runs by ~2.0Mb/d y/y in 1H15. Over that period, global oil demand was only up 1.7Mb/d y/y, according to the latest IEA estimates. Some of the production has gone into storage. Both European and North American oil products inventories are above the 5-year average and close to their highest level of the past 5 years based on days of forward demand. Middle distillate inventories have gone up the most while gasoline inventories are still relatively low in the US. The inventory levels could weigh on margins in the short term.

Figure 114: OECD Americas oil products inventories



Source: EIA

Figure 115: OECD Europe oil products inventories



Source: IEA

Crude quality differentials

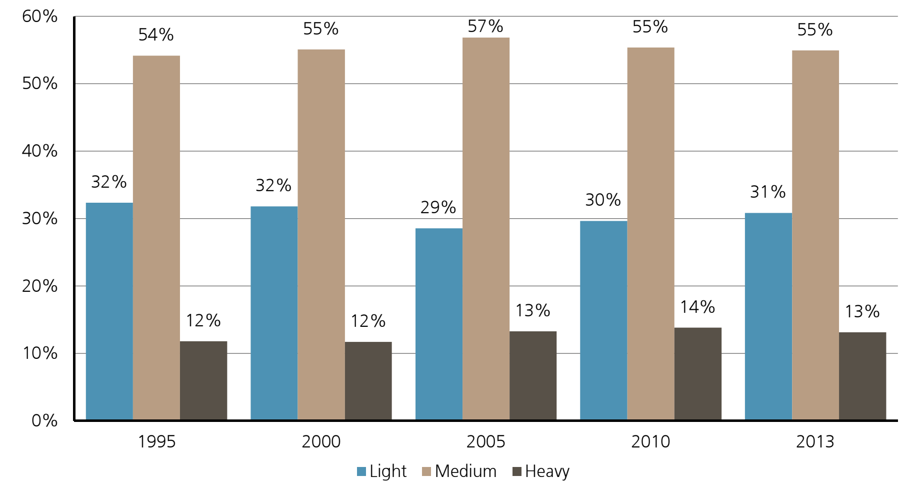
Crude differentials have remained remarkably stable in the past few years despite the major changes in the oil market. We expect crude quality differentials to remain relatively narrow over the coming years. We see the Brent-Urals spread at $1/bbl, Brent-WTI at $5/bbl and Brent-LLS at $2/bbl.

The quality of global crude production has on the whole improved slightly over the past few years. The crude slate has become lighter with the average crude API at ~33° and sweeter with sulphur contents down to 1.14%. This has been mainly driven by increased production of tight oil in the US. Production at some of the key heavy crude producers (Venezuela, Iran) has been declining too.

Major contributors to non-OPEC supply growth are relatively light barrels: Brazil's Santos Basin has an API of ~30° while North American shale oil plays are extremely light, in some cases ~40°. We expect the call on OPEC to increase slightly over the coming years and within OPEC, more light oil is coming out of Iraq which is offset by higher heavy Iranian production. The weighted average API of global crude oil production is thus expected by the IEA to remain stable around 34.0° over 2014-20, with sulphur content is expected to drop by 0.01% to 1.18%, i.e. little discernible change in crude quality.

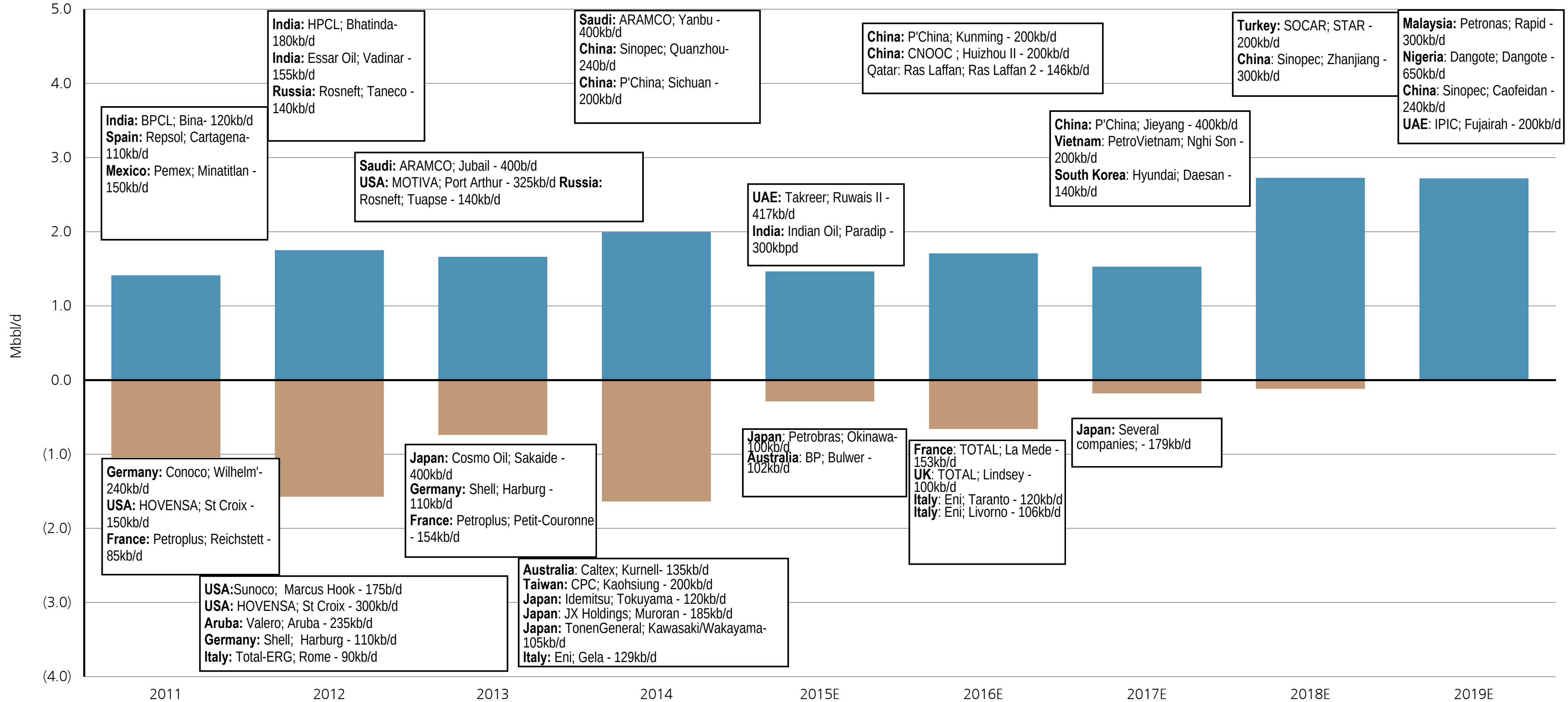
At the same time, the global refining system has become considerably more complex and therefore able to process and upgrade heavier and more sulphurous feedstocks. New refineries and further upgrades reinforce this process. It appears unlikely there will be a return to a buyers' market for heavy crudes in the foreseeable future. The return of Iranian barrels should help but we only forecast a return of 0.8kbpd of capacity by end 2016 and another 0.4kbpd by 2020.

Figure 116: Crude production by gravity (*)



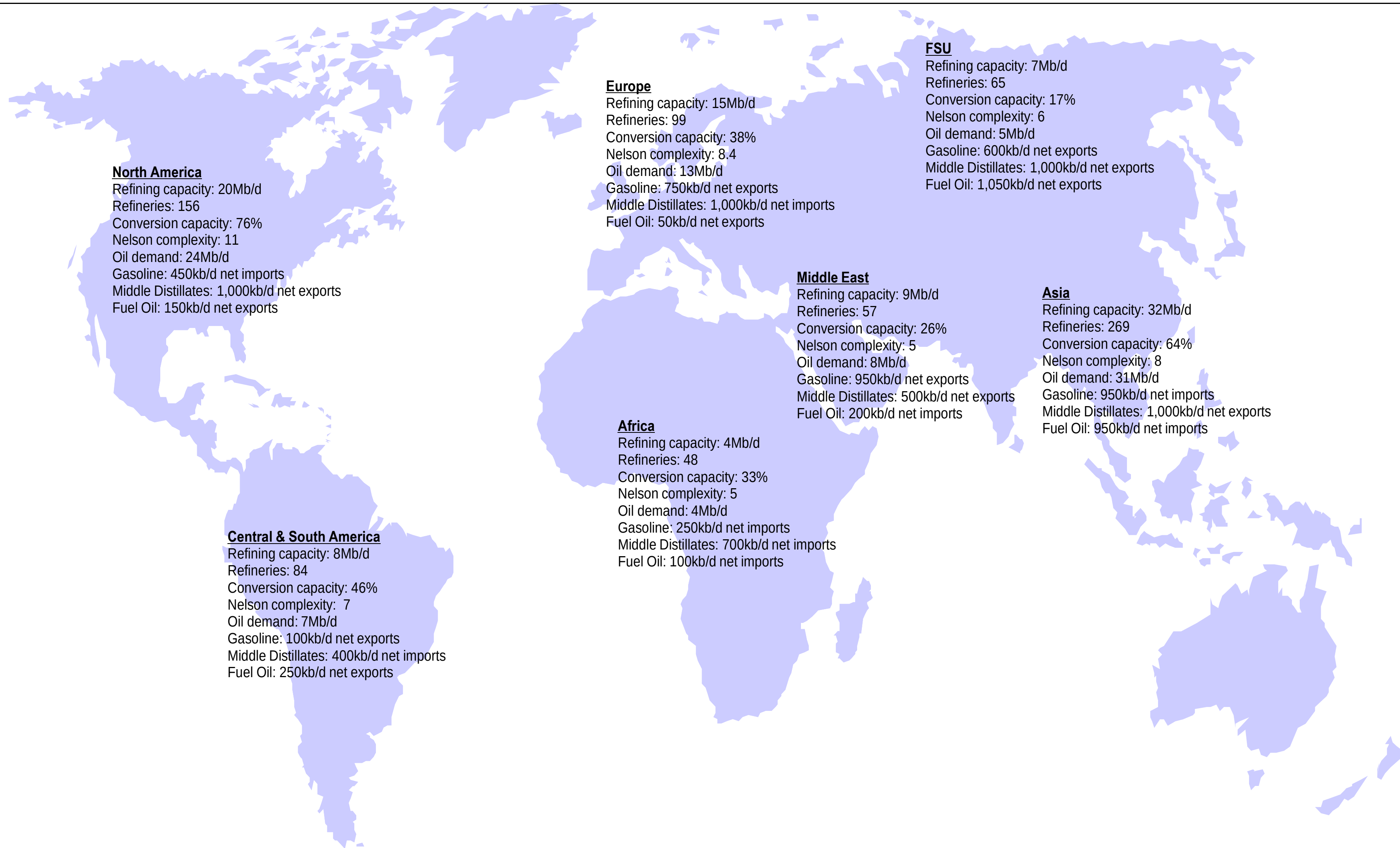
Source: Eni WOGR (*) Light: API level equal to or greater than 35°; Medium: API level >26° and <35°; Heavy: API <26°; Balance to 100% = Unclassified

Figure 117: Crude Distillation Unit: Capacity expansions and risked closures (2011-19E); Selected projects



Source: UBS estimates, IEA, BP Statistical Review of World Energy

Figure 118: Regional refining capacity, complexity and product flows



Source: UBS estimates, IEA, EIA, BP Statistical Review, Company reports, Eni WOGR

European Refining

- **Capacity and complexity:** Europe has ~15Mb/d of refining capacity and 99 refineries. It has an average Nelson Complexity of 8.4 and conversion ratio to distillation capacity of 38%. The refining system is generally quite old and poorly configured to match local demand, although it has improved thanks to recent upgrades and closures of less complex refineries. The average product yield of a European refiner is 21% gasoline, 48% middle distillates and 9% fuel oil, while demand is split 14% gasoline, 53% middle distillates and 7% fuel oil.

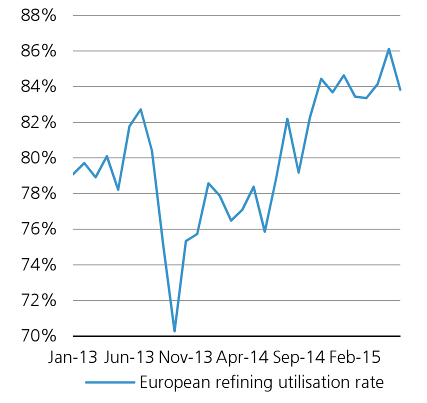
- **Refining margins (EBITDA)** of the European refiners over the last five years averaged $3.2/bbl, compared to $8.5/bbl in the US.

- **European oil demand has been in structural decline.** It was down to 13.8mb/d in 2014 from 16.0mb/d in 2008, a decline of 360kb/d per annum. The global economic crisis led to that sharp fall but demand had been stagnating in the years leading up to it. Demand has picked up in 2015 (1H15 +1.6% y/y) thanks to the lower oil price but the underlying factors behind Europe's reduced consumption remain intact. We expect to see further increases in energy and transportation efficiency, continued decline of heavy industries and manufacturing and push towards renewables. We expect demand to be flat over 2015-19 as the decline over 2017-19 offsets the growth of 2015-16.

- **The refining system remains unbalanced.** The decline in demand has been sharp in gasoline (-20% in 20 years) while middle distillates demand grew (+33% in 20 years). The region is a net exporter of 750kb/d of gasoline, a net importer of 1,000kb/d of middle distillates and fairly balanced for fuel oil. There has been talk of restricting the use of diesel because of air pollution concerns in some European countries but the proposals are at an early stage and it would take some time for the car fleet to switch over to gasoline.

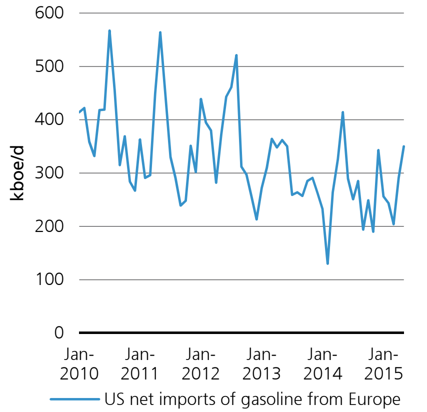
- **Rebound in demand eases pressures.** The surge in US gasoline demand this year, coupled with outages at many refineries in the Atlantic Basin, has halted the decline in exports to the US, which fell to ~300kb/d in 2014 from more than 450kb/d in 2008. This had been driven by lower US demand and high utilisation rates at US refineries. European refiners usually export surplus gasoline to the US and West Africa, and the slow shrinking of the US market had been a key element of pressure for European margins. US refiners have also started exporting more significant amounts of gasoline, to Latin America but some of it to West Africa, a more traditional market for European refiners. To the East, new export-oriented refineries are starting up in the Middle East and India, which are expected to increase competition as they target local gasoline demand, usually met with imports from Europe.

Figure 119: European refining utilisation rates



Source: Euroilstock

Figure 120: US gasoline imports from Europe

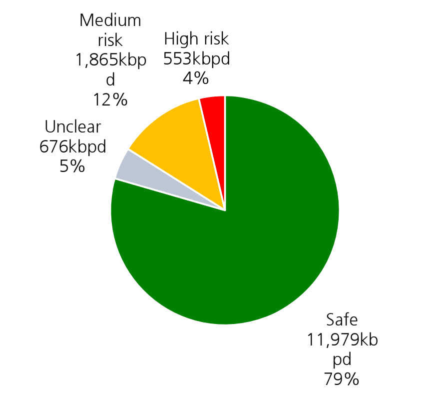


Source: EIA

- **And lower oil price reduces their cost disadvantage.** European refiners have amongst the highest costs in the world due to high labour, environmental and energy costs. Most refineries consume a high proportion of crude oil as their primary energy source, whereas US refiners are configured to run on natural gas. The fall of crude oil from >$100/bbl to ~$50/bbl and in oil-linked gas to $7/mmBtu ($42/boe) has materially reduced their disadvantage vs. US peers, which use natgas at $3/mmBtu. US refiners should continue to enjoy cheaper energy costs though. The new modern export refineries are more efficient too and enjoy lower labour costs and environmental pressures.

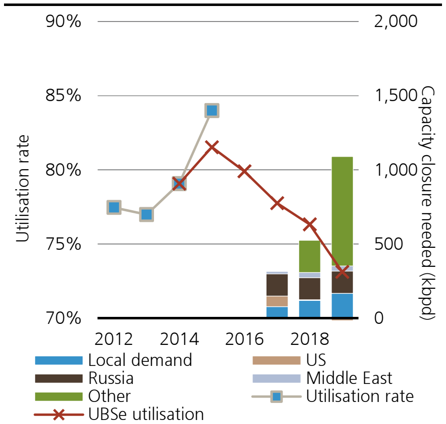
- **But longer-term remains challenging.** The current oil price and demand environment is a breath of fresh air for European refiners but it does not solve their long-term issues. We think the utilisation rate should remain near 80%, a reasonably healthy level, for the next couple of years. As global capacity increases again from 2018, European refiners should remain the weakest link and more closures would have to take place to make room for the new entrants. We estimate that at least 1Mbpd will need to be shut by 2019, or ~700kbpd on top of previously announced closures.

Figure 121: European refineries at risk



Source: UBS

Figure 122: Capacity reductions required



Source: UBS

- **Expect slower rationalisation.** There are still a number of refineries which look at risk of shutting down but what we expect to be decent margins over the next couple of years should slow down the rationalisation process in Europe. It has already happened to some extent. The capacity reductions at TOTAL are now expected to take place by end 2016. We believe they could have taken place in 2015 had margins not recovered. Similarly Eni would likely have brought forward plans to reduce more capacity in Italy. Most candidates for closures are not without challenges too, quite often because they are the last refinery or one of the last two refineries operating in a particular country, increasing political pressures. New entrants such as NOCs or trading groups could also delay the process, although NOCs have lost some of their firepower because of the oil price fall.

- **Changes in global crude supplies could bring some benefits but not a major advantage.** European refiners' crude slate is mostly made up of expensive North Sea light oil (in decline) and Russian medium sour Urals. North Sea production is in decline and Russian Urals has been trading at a narrower discount to Brent than in the past as Russian refineries increase their runs and Russia diverts more crude oil East towards China. That trend will likely keep the discount narrow in the foreseeable future. There are a few positive developments in the market however. It may be noted that European refiners, if sanctions are lifted, may be able to import Iranian crude again, which made up ~5% of their crude slate until sanctions banned imports. There is increasing talk of lifting the ban on crude oil exports in the US, which would give them access to more alternatives. Libya has also been producing at relatively high rates given the situation in the country and Iraq is ramping up well.

- **In summary, we see the European refining industry as enjoying some respite over the short and medium term but still facing significant challenges.** The global industry is still oversupplied, but the lower oil price and the demand boost provide meaningful support to refiners in the short-term. The structural issues of the industry should reappear around 2018 when more capacity comes on stream globally and the oil price ramps back up but refiners should be in better shape to face lower margins by then. European demand is stuck in structural decline, the regional refining system is old, inflexible, high cost, poorly configured to match local demand and faces increasing environmental costs. It also faces intense competition from across the Atlantic Basin and from new competitors in Russia, the Middle East and Asia. We see the European composite refining margin averaging $1.50/bbl in 2014, $2.18/bbl in 2015 and $2.00/bbl in the long-term vs. ~$4/bbl over 2008-12 and $2.06/bbl in 2013.

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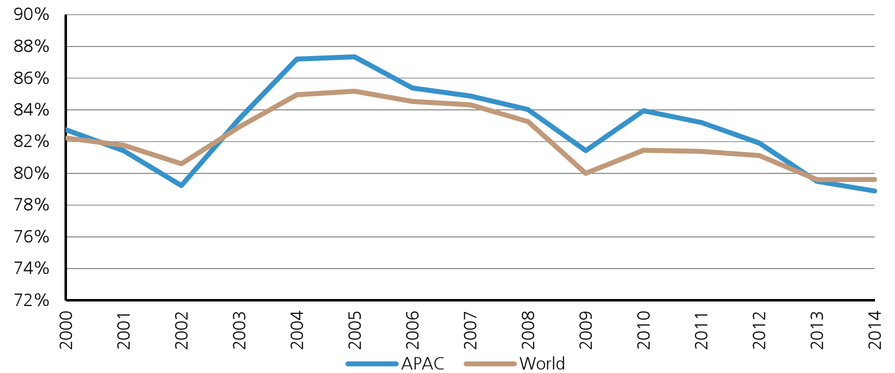
Asia Refining

- **Asia has the largest refining capacity in the world:** Refining capacity in Asia Pacific increased 3.4% CAGR in 2004-2014 (versus global capacity growth of 1.3% CAGR), driven mainly by aggressive expansions in China (7.9% CAGR) and India (5.4% CAGR). At the end of 2014, Asia Pacific has 32.5Mbpd CDU capacity, or 34% of global refining capacity, up from 27% in 2004.

Figure 123: Global and APAC refining utilization rate



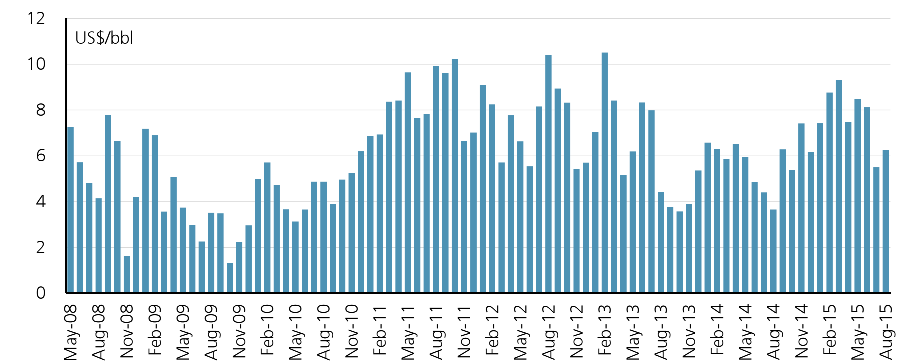
Source: BP statistics

- **Major players in APAC:** At the end of 2014, around 77% of Asian refining capacity comes from China (43%), India (13%), Japan (12%), and South Korea (9%). The top five refining companies in Asia in terms of refining capacity are Sinopec and PetroChina in China, Reliance Industries in India, JX Holdings in Japan, and SK Innovation in South Korea.

- **Relatively stronger demand growth:** Refining throughput in APAC increased 2.4% CAGR in 2004-14, which was much stronger than global throughput growth of only 0.6% during the same period. Strong demand has been mainly driven by China and India, which had 6.0% and 5.7% CAGR in 2004-14, respectively. Given relatively stronger demand, the average refinery utilization rate in APAC in 2004-2014 is 1.1% higher than the average global refining utilization rate of 82.3%.

- **Singapore complex refining margin under pressure:** The Singapore complex refining margin, which is the benchmark margin for Asian refining market, reached its peak of US$8.3/bbl in 2011 and has been falling in the past 3 years; down to US$7.5/bbl in 2012, US$6.2/bbl in 2013 and US$5.8/bbl in 2014. Sluggish demand and growing supply have been putting pressure on Singapore complex margin in the past 3 years, after an up-cycle during 2009-2011. However, with crude oil price falling sharply from around US$110/bbl in June 2014 to around US$50/bbl at the end of 2014, the Singapore refining margin had a strong rebound in 1H15. Despite the spike in 1H15, we believe the refining margin will gradually contract and our long-term forecasts remain intact given a sluggish demand outlook and new capacity coming on stream in the global market.

Figure 124: Singapore complex refining margin



Source: Datastream

- **Demand slowing down along with slowing economic growth:** The growth of demand for refining products has been slowing down since 2011. The peak of the refining margin in 2011 was driven a lot by major supply disruption in Japan after 30% of the refineries there were damaged by the earthquake and tsunami. The slowdown of demand is in line with slowing economic growth in the region. GDP growth for Asia ex-Japan slowed down from 9.5% in 2010 to 7.4% in 2011, 6.2% in 2012, and 6.4% in 2013 and 2014. Slowing industrial activities have translated

into weaker demand for middle distillates, while gasoline demand has been relatively healthy in the region, driven by the strong auto sales in the past 5 years.

- **Capacity additions slowed down in 2014:** Refining capacity additions were accelerating in APAC when demand was slowing down during 2011-13. Total refining capacity in APAC increased 2.6% in 2011, accelerating to 4.9% in 2012, and 4.7% in 2013. In 2014, capacity additions slowed down to 1.3% as closures took place in Japan and Australia. Most of the new refinery capacities were added in China and India. China added almost 3.8Mbpd of refining capacities in 2011-2014, translating into an average of 8% per annum capacity growth in the country.

- **YTD Singapore complex refining margin up 38% y/y:** On the monthly average basis, Singapore complex refining margin has dropped 41% from its peak of US$9.3/bbl in March 2015 to around US$5.5/bbl in July 2015. YTD average is US$7.6/bbl, which is 38% higher than the YTD average of US$5.5/bbl in 2014. The correction of refining margin since June was partially driven by increasing supply in the region after heavy maintenance shutdowns in 2Q15. Exports to other regions such as the Middle East have also decreased with growing local capacity and increasing export shipments from the US, which translated into more supply staying in Asia.

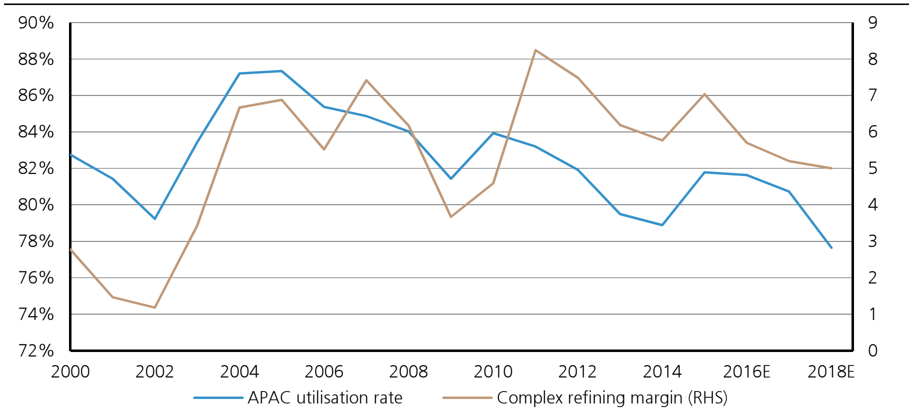
- **Near-term outlook on Singapore refining margin:** China exports of refining products, especially diesel, have increased given over-supply in the domestic market. In the third-quarter review of annual export volumes in 2015, three state-run refiners have been granted an additional diesel export quota of 2.86m tons (~245kbpd over one quarter), more than double the quota issued in the second quarter. Meanwhile, demand for refining product remains sluggish in the region, as economic growth is slowing. We believe complex refining margins in Asia should see some mild recovery toward the end of this year as we expect refining companies to lower their run rate in view of the poor margins, while demand should gradually improve in Q415 ahead of the winter season. Nonetheless, we expect average complex refining margin to decrease 30% HoH in 2H15.

- **Long-term outlook on S/D and refining margin:** We forecast Singapore complex refining margin to increase slightly by 0.5% to US$5.8/bbl in 2015, which is now 24% lower than the YTD average. Looking forward, we expect Singapore complex refining margin to weaken from 2016 as we estimate that capacity growth in the region is likely to reach 1.8% in 2016, 2.7% in 2017 and 5.6% in 2018, and total capacity in APAC should reach 35.2Mbpd in 2018 from 32.5Mbpd in 2014.

- We estimate China will contribute to around 68% of the gross capacity additions in 2015-18. Meanwhile, we estimate that demand growth should remain stable at 2.2% per annum during 2015-18. Accordingly, we expect utilisation rate in APAC to drop from 82% in 2015E to 78% in 2018E, and Singapore complex refining margin should drop to US$5.7/bbl in 2016 and US$5.2/bbl in 2017.

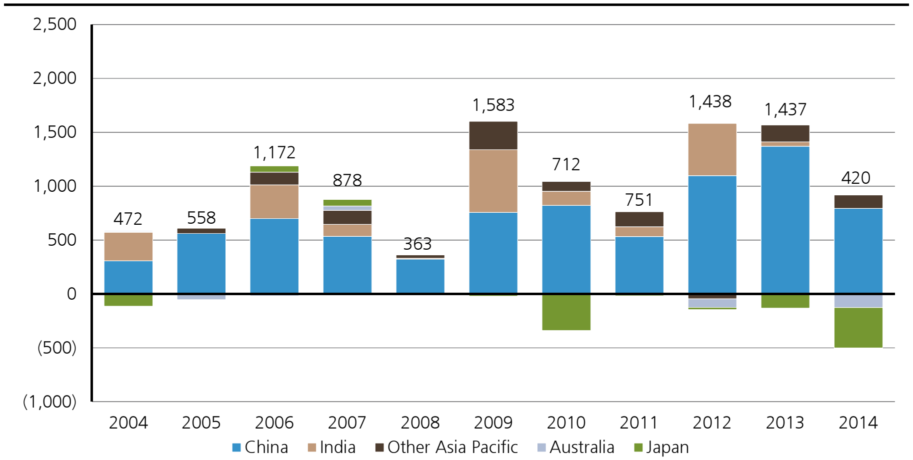
- **In summary, weak fundamental outlook, with China being the major risk factor:** We are conservative on the fundamental outlook for the APAC refining sector given potential margin correction in the long term, with rising capacities in China and SE Asia and stagnant demand growth. However, China remains the main swing factor on the regional supply/demand balance. Cancellation of new refinery projects or potential delays in China would be an upside risk for the regional balance.

Figure 125: Singapore complex refining margin (US$/bbl) versus Asian refining capacity utilization rate



Source: DataStream, BP Statistics, UBS estimates

Figure 126: APAC refining net capacity addition (1,000 bpd)



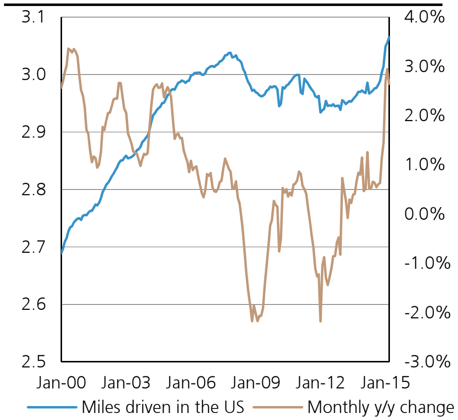
Source: BP Statistics

US refining

- **The US has ~18Mb/d of refining capacity and 138 operating refineries.** It ranks as the most sophisticated and complex refining system in the world, with an average Nelson Complexity of ~11. The Gulf Coast holds 51% of US capacity, with the balance spread out throughout the Midwest (22%), West Coast (18%), East Coast (6%) and Rockies (4%).
- **Refining margins (EBITDA)** of the US refiners over the last five years averaged $8.5/bbl, compared to $3.2/bbl in Europe.
- **Product yield weighted towards gasoline.** The average product yield of a US refiner is 47% gasoline and 28% middle distillates. This closely matches US demand, which is split 47% gasoline and 29% middle distillates.
- **Refined product demand bouncing back.** DOE data shows refined product demand peaked at 20.8Mb/d in 2005, and then trended lower through the recession. Demand picked up in 2013 (+2.5% y/y to 19.0Mb/d) and the recovery continued in 2014 (+0.4% y/y). The recovery gathered pace this year as preliminary data showed a 2.7% y/y increase in 1H15 thanks to stronger gasoline demand (+3.4%). Miles driven in the US returned to growth in early 2013 but they really picked up in 2H14 when the oil price started rallying: they are up 5% YTD to their highest level on record. We expect U.S. oil demand to improve 1.9% on the whole for 2015, and to grow by 0.6% per annum on average over 2015-19.
- **But some long-term headwinds remain.** Part of the recent strong gasoline growth is related to a slowdown in fuel efficiency of new cars sold in the US. The lower gasoline price has shifted consumers' preference back towards the large gas-guzzling SUVs and miles per gallon of new cars have stabilised in the past 6 months after several years of steady increase. It is not a reversal of the trend, however, and federal fuel efficiency standards for new cars and trucks remain in place, calling for an increase from 35.2/26.2 Mpg in 2014 to 44.2/30.6 Mpg by 2020 for new car models. We estimate that every 1 Mpg increase in fuel efficiency for the aggregate US vehicular fleet results in a 310 kb/d decrease in gasoline demand. Meanwhile, the Renewable Fuel Standards (RFS) as proposed by the EPA will require the use of corn ethanol and other biofuels in transportation fuels to scale up from 15.9bn gallons

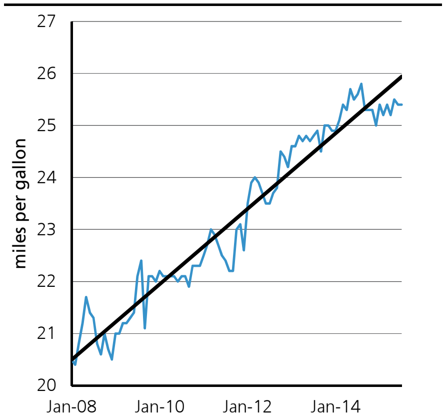
(1.0Mb/d) in 2014 to 17.4bn gallons (1.1Mb/d) in 2017, displacing gasoline and diesel. The RFS may not reach the original target of 36bn gallons (2.35 Mb/d) by 2022, but the EPA reiterated its intention to support biofuels in the long-term when it introduced its latest proposal in late May 2015.

Figure 127: Miles driven in the US



Source: US Department of Transportation

Figure 128: New cars' fuel efficiency



Source: University of Michigan

- **We expect to see further capacity additions in the US in the next two years, mainly to leverage access to discounted feedstocks.** Around 250kb/d of new capacity is coming on stream in 2015, consisting of new condensate splitters (185kb/d), a new 20kb/d refinery in North Dakota and small capacity expansions. We expect to see another ~300kb/d of new capacity in 2016 but this slows down to ~50kb/d in 2017. The projects are geared towards boosting the processing ability of discounted heavy, shale or waxy crudes in the Mid Continent, or towards increasing distillate yield and export ability in the Gulf Coast region. Condensate splitters make up a significant share of current projects as light oil production continues to grow in the US.

- **The US is increasingly a net exporter of refined products.** In part due to decreased domestic demand, US refiners' position as net exporter of refined products has increased steadily by 530kb/d per year since 2010 (+550kb/d in 2014). The trend has slowed down markedly this year despite record-high run rates as domestic demand bounced back: net exports are only up 67kb/d over January-May. Central/South America and Europe have been major recipients of US exports, with each region taking ~43% and ~17% of total US refined product exports in 2014.

- **Debate around US exports of crude oil heats up; lifting of the ban looking more likely.** The US Department of Commerce limits crude oil exports to: (1) crude oil derived from fields under the state waters of Alaska's Cook Inlet; (2) Alaska North Slope crude oil; (3) certain domestically produced crude oil destined for Canada; (4) shipments to US territories; and (5) California crude oil to Pacific Rim countries. The ban on exports, in place since the 1970s, has come under greater scrutiny recently because of the renaissance of US crude oil production. Legislation is currently advancing in Congress which raises the prospect of an end to the ban on crude oil exports. This would have negative consequences for US refiners which have enjoyed cheaper crude than their global peers thanks to the ban. US authorities have already started to chip away at it, allowing exports of condensates last year and signing an agreement to swap crude with Mexico this year, suggesting lifting the ban outright is only a matter of time. The ban remains intrinsically linked with the Jones Act which restricts shipping by boat within the US to US ships, including for crude oil, which meaningfully increases the costs. Lifting the ban without addressing the Jones Act would put some US refiners, especially on the East Coast, at a clear disadvantage. That complication could slow down the process.

- **In the meantime, US refiners still enjoy access to cheaper crude.** We project US oil production will grow to 12.6Mb/d in 2015 and to 14.4Mb/d by 2020 from just 9.2 Mb/d in 2012. US shale producers have been hit by the collapse in oil prices but have delivered meaningful cost reductions. Growth has slowed down but the industry remains on a long-term growth track. This should guarantee easy access to crude for US refiners. Some of them should be able to keep the advantage that pipeline costs provide (~$5/bbl from Cushing to the Gulf Coast). The situation could be more challenging for East Coast refiners, for which access to discounted crude was a lifeline over the past 5 years.

- **US refining operating costs to benefit from plentiful natural gas.** We believe that increasing low-cost shale gas production is reducing the price required to meet

adequate returns for US upstream operators to ~$4.0/MMBtu in the long run. Meanwhile, our normalised European natural gas price is $9.5/MMBtu, while our long-term Brent forecast is $80/Bbl (implying an energy equivalent natural gas price of ~$13.3/MMBtu). Given US refiners are configured to run on natural gas as a plant fuel source—while European and Asian refineries consume a high proportion of crude oil as their primary energy source—we estimate US refiners will enjoy a material operating cost advantage versus global peers.

- **Regional margins.** We expect margins to weaken over the next few years but remain at a relatively high level. Margins spiked in 2015 as the oil price fell sharply and as the market was not prepared for the strong gasoline demand response, the impact of which was amplified by many refinery outages. We expect to see stronger margins over summer periods into the medium term, but not of the same magnitude as the summer of 2015. The narrower spread differentials mean Mid-Cont margins are unlikely to return to the record levels of a few years ago. The risk of blow-outs in differentials and refining margins has gone down over the past year as US production growth slowed down and demand picked up. The refining system and exports have absorbed the crude production growth so far.

- **In summary, we believe US refiners are still well positioned to outperform.** While they have lost some of their competitive advantage as global crude prices collapsed, we estimate US refiners still have an edge over global peers thanks to better growth prospects in their home market and their good access to crude. Their higher complexity should also allow for greater agility in responding to feedstock pricing dynamics. Furthermore, natural gas in the US is still cheaper as a plant source fuel, which lowers their break-even point vs. peers.

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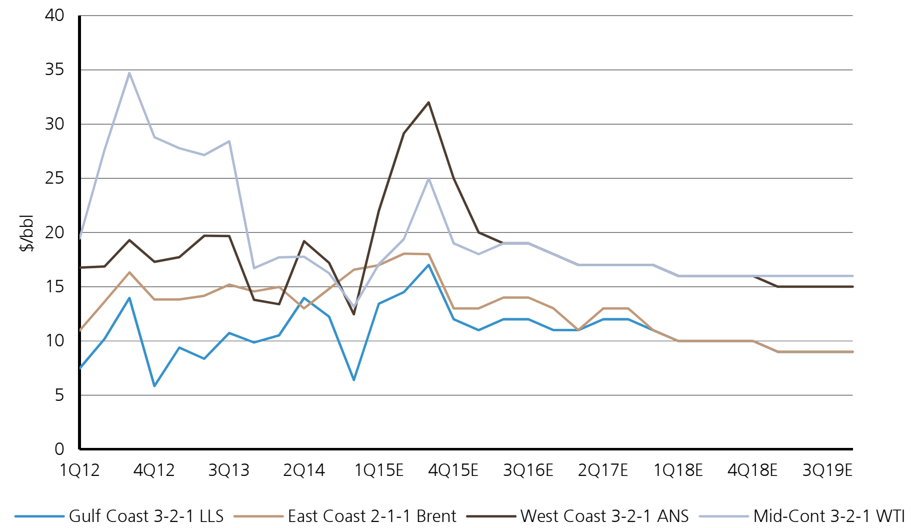
Figure 129: US refining margins by region



Source: UBS

Figure 130: Refining capacity and complexity by region

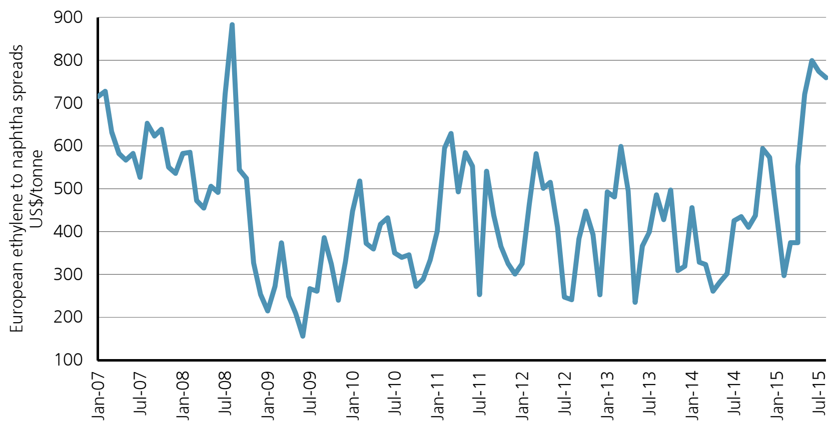
	North America		Europe/FSU		Middle East		Asia Pacific		Other		Total	
	Capacity	Complexity	Capacity	Complexity	Capacity	Complexity	Capacity	Complexity	Capacity	Complexity	Capacity	Complexity
BG	-	-	-	-	-	-	-	-	-	-	-	-
BP	744	9.11	847	9.84	-	-	276	6.67	90	7.71	1,957	9.01
Cenovus	230	11.89	-	-	-	-	-	-	-	-	230	11.89
Chevron	1,015	13.01	-	-	-	-	775	7.23	110	5.62	1,900	10.22
Eni	-	-	595	10.07	-	-	-	-	-	-	595	10.07
ExxonMobil	2,372	12.52	1,646	8.9	215	1.00	1,015	9.25	-	3.88	5,248	10.48
Galp Energia	-	-	330	8.70	-	-	-	-	-	-	330	8.70
Gazprom	-	-	-	-	-	-	-	-	-	-	-	-
Gazprom Neft	-	-	974	7.82	-	-	-	-	-	-	974	7.82
Husky Energy	353	9.13	-	-	-	-	-	-	-	-	353	9.13
Imperial Oil	420	9.13	-	-	-	-	-	-	-	-	420	9.13
Lukoil	-	-	2,189	8.07	-	-	-	-	-	-	2,189	8.07
Mol	-	-	420	10.07	-	-	-	-	-	-	420	10.07
Novatek	-	-	-	-	-	-	-	-	-	-	-	-
OMV	-	-	358	6.17	-	-	-	-	-	-	358	6.17
ONGC	-	-	-	-	-	-	216	6.00	-	-	216	6.00
Petrobras	100	7.60	-	-	-	-	100	2.61	2,230	5.36	2,430	5.34
PetroChina	-	-	-	-	-	-	3,419	8.54	-	-	3,419	8.54
PTT Public	-	-	-	-	-	-	349	7.00	-	-	349	7.00
Reliance	-	-	-	-	-	-	1,225	12.81	-	-	1,225	12.81
Repsol	-	-	896	7.80	-	-	-	-	52	3.45	948	7.56
Rosneft	-	-	1,905	5.61	-	-	-	-	-	-	1,905	5.61
RDShell	1,113	12.57	992	9.15	146	5.22	680	5.99	163	6.89	3,094	9.38
Sasol	-	-	-	-	16	-	-	-	217	-	233	-
Sinopec	-	-	-	-	-	-	5,872	8.91	-	-	5,872	8.91
Statoil	-	-	266	6.45	-	-	-	-	-	-	266	6.45
Suncor Energy	462	10.31	-	-	-	-	-	-	-	-	462	10.31
Surgutneftegaz	-	-	404	4.69	-	-	-	-	-	-	404	4.69
TOTAL	169	19.46	1,736	7.67	129	4.74	49	3.92	104	4.71	2,187	8.19

Source: UBS, Oil & Gas Journal, Company Data, WoodMackenzie

Chemicals markets

Petrochemical prices have seen a sharp fall in pricing over the past 12 months due to their strong correlation to the oil price. But the oil industry primarily has naphtha-based petrochemical production capacity as part of its overall refinery operations and since naphtha prices have corrected more rapidly with oil prices, we have seen a widening of olefin to naphtha spreads, in other words naphtha-based cracker margins. This should be seen more as a timing effect though as olefins plus the downstream chemical chain should, over time, see pricing come down in line with oil prices and margins will resume more normal conditions in line with current cracker utilisation rates.

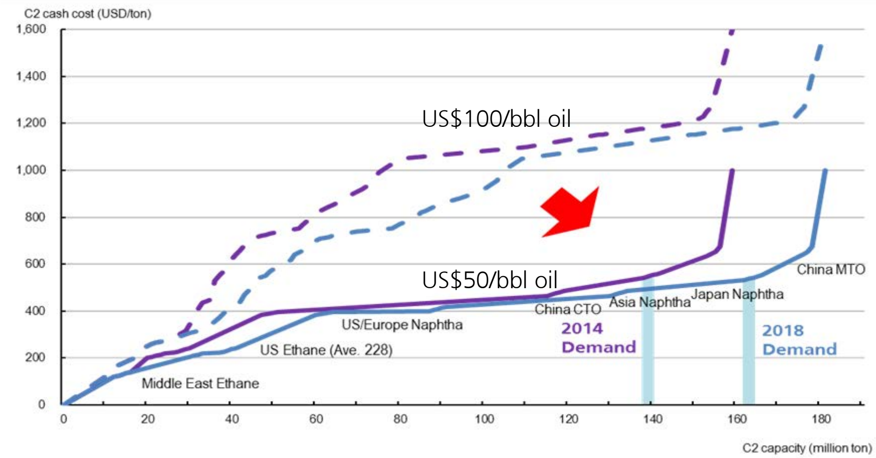
Figure 131: European ethylene to naphtha spreads have shown a dramatic widening due to feedstock prices correcting faster with oil than cracker products



Source: DataStream, UBS Estimates

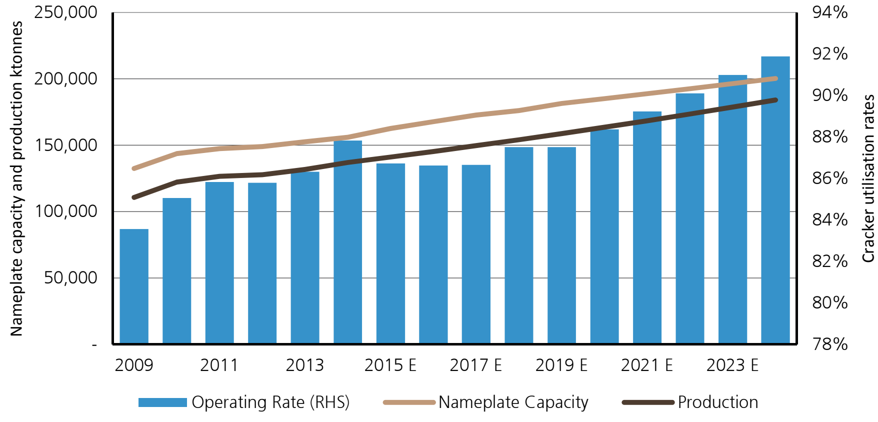
But for producers in the US and Middle East that have a large proportion of their petrochemical production capacity based on natural gas liquids (NGLs), and in particular ethane, the oil price fall has significantly impacted producer cash margins due to a sharply flattening global petrochemical producer cost curve. Alternative feedstock projects such as coal to chemicals have seen the most dramatic reduction in cash margin

Figure 132: The fall in oil prices has dramatically flattened the cost curve



Source: CMAI, UBS US Chemicals research

Figure 133: Global ethylene supply/demand (Mt) – a tight market by 2020 looks to have a reasonable probability



Source: CMAI, UBS Research

potential. We believe this will serve to slow the pace of production capacity roll-out in these regions. In the US, petrochemical projects based on ethane still comfortably cover their cost of capital, but given that more than three-quarters of planned petrochemical cracker capacity is being constructed by oil companies, who now wish to conserve cash, we expect a slowing pace here also.

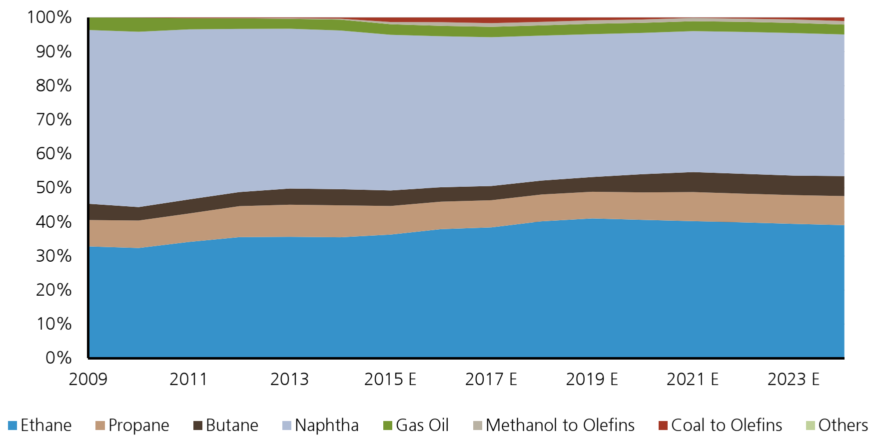
This means that global cracker operating rates are likely to see upside as we enter into the next decade, which on the whole should improve producer profitability for naphtha-based producers. Margins for NGL and coal-based producers need a higher oil price to improve cash margins. But on the whole the recent fall in oil prices coupled with uncertainty over the pace of emerging market growth is likely to significantly stunt capacity growth rates in the coming years.

A flatter cost curve is likely to now result in less of an imbalance between various olefins. When the ethylene producer cost curve was much steeper at higher oil prices, there was a significant incentive to invest in low-cost NGL-based production while coal-based production was deemed to be viable. Since this meant a diversion away from the traditional olefin production slate, shortages in chemicals that are not cost-effectively produced from NGLs were expected to result. The pace of change in the mix of olefins produced will now slow. This will create fewer areas of over- or under-supply between various olefins than we were experiencing before, such as very tight C4 plus olefins vs. very long ethylene. But propylene will see a sharp change in its production split by feed-stock due to significant investment in de-hydrogenation capacity. This should enable a narrower spread of propylene versus oil, which has been quite wide at times, significantly impacting downstream economics for some producers, especially in the US.

From a regional consumption perspective, Europe is expected to continue to see a decline in its proportion of consumed ethylene while emerging market share growth should ease somewhat if emerging market growth concerns persist. The US will increase its share of demand towards the end of the decade as NGL-based production comes on stream.

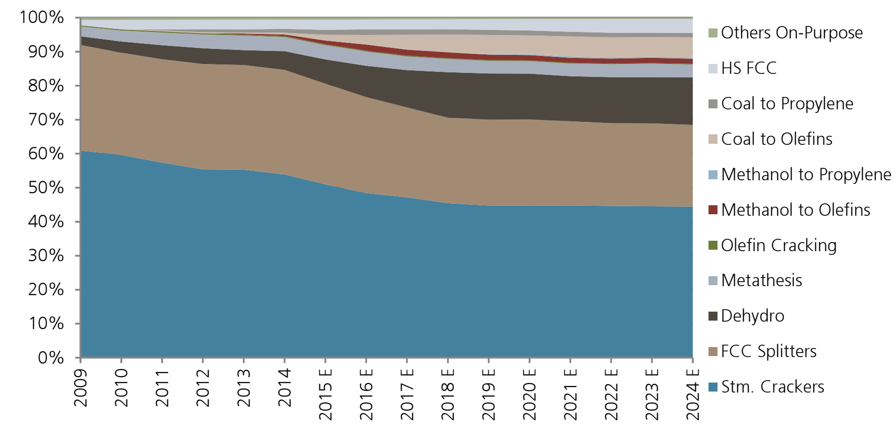
Ethane should continue to be the largest contributor to incremental production over the next 10 years but production additions from naphtha should continue to be significant.

Figure 134: Naphtha proportion of cracker capacity is likely to stabilise from 2020



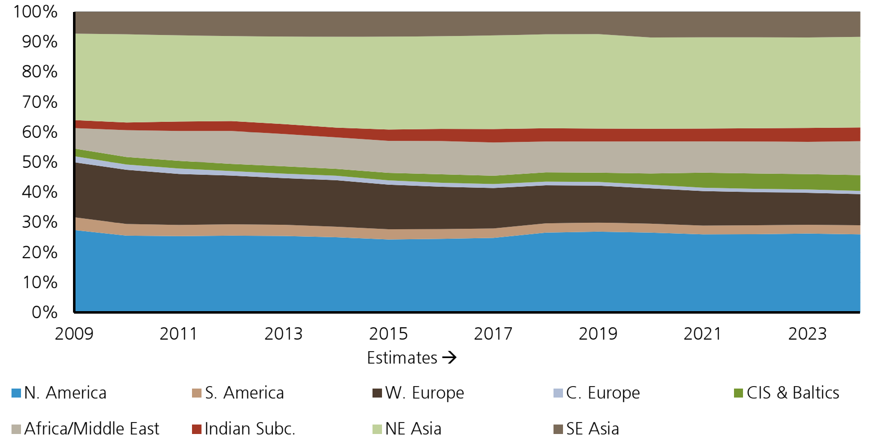
Source: CMAI, UBS Research

Figure 135: Propylene is still expected to see a significant shift to NGL feedstock based production but this like ethane is expected to stabilise into the next decade



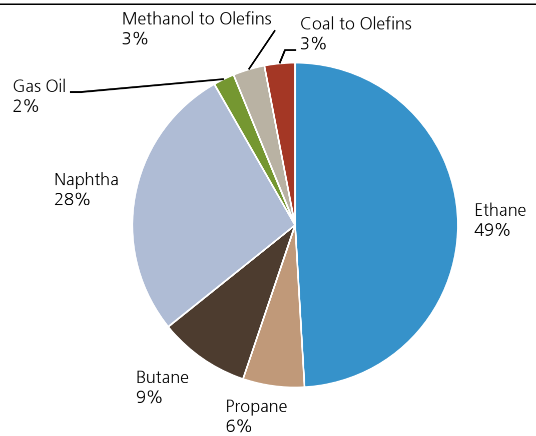
Source: CMAI, UBS Research

Figure 136: Global ethylene demand split



Source: CMAI, UBS Chemicals Research

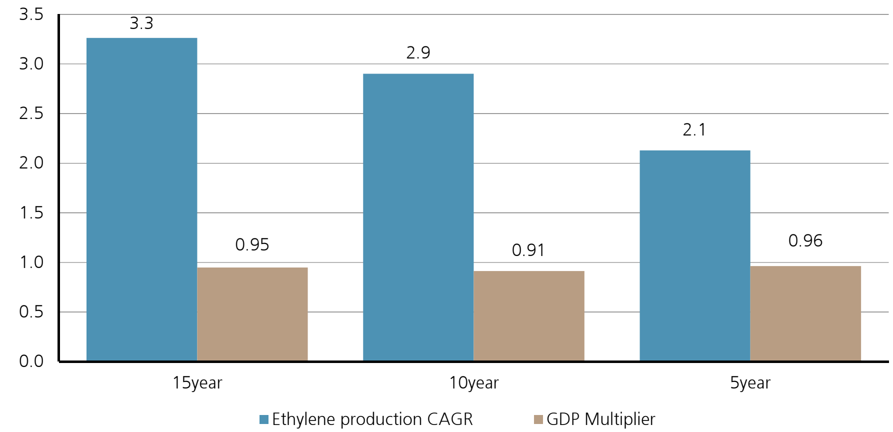
Figure 137: Increase in ethylene production 2014-25, % of 50m tonnes



Source: CMAI, UBS Chemicals Research

Ethylene's real GDP multiplier has been declining and signals a slower recovery than in past cycles.

Figure 138: Global ethylene demand vs. GDP multiplier



Source: CMAI, UBS Chemicals Research

During the credit crunch the multiplier turned negative due to significant destocking of chemicals throughout the value chain.

Global ethylene production has grown at about 2.9% CAGR over the past five years, which is down from a 3.2% CAGR over the past 10 years and 3.6% over the past 15 years.

Chemicals – Product summary

- **Ethylene:** We expect global ethylene capacity addition to outstrip global demand growth for the next 3-5 years but due to weaker oil prices we believe that there will be a slowing in capacity addition which will likely lead to a tight market at the start of the next decade.
- **Polyethylene:** Global operating rates for polyethylene polymerisation capacity are expected to decline from about 90% to about 87% by 2017 but we expect slower capacity roll-out to improve operating rates by the end of this decade.
- **Propylene:** Supply tightness will see some easing thanks to the addition of on purpose propylene production PDH units as well as more favourable naphtha cracking margins. But supply demand is expected to tighten into the next decade due to a slowing of capacity additions.
- **Polypropylene:** Non-integrated polypropylene producers will have to continue to compete for feedstock versus bulk chemical producers but this competition is expected to ease going forwards before tightening again by the end of the decade.
- **Butadiene:** Supply growth is expected to remain low at less than 2% per annum over the next five years, but de-stocking in downstream rubber products and tyres has led to price spreads expanding less aggressively than previously anticipated. More favourable naphtha cracking margins will enable supply but we expect butadiene on average to trade at about 1.3-1.5x the naphtha price. In an oversupply situation, the material typically sells for 0.7*naphtha as at prices below this it is reprocessed in the refinery rather than sold.
- **Aromatics and BTX:** Prices on these products are expected to continue to correlate with the oil price and the market is expected to be balanced over the next five years.

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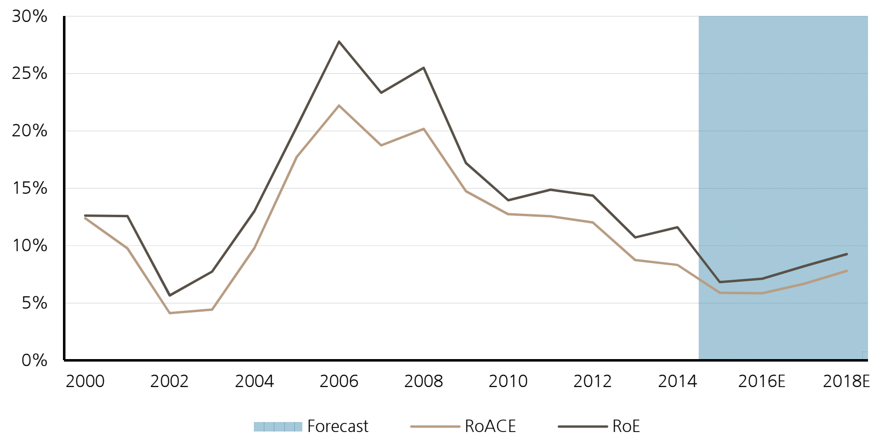
Oilfield services and costs

Oil companies are adjusting their thinking and anticipating that the oil price will stay lower for longer. As a consequence they are adapting their cost base accordingly by slashing capex and opex, which in turns impacts volumes and margins for oil services companies. While the effects thus far may have been more acute on the service companies exposed to early-cycle activities, discretionary spend or areas where over-capacity exists (e.g. seismics and drillers), we think it is only a matter of time before other subsectors start to feel the pain as a result of the squeeze in spending. As illustrated by the graph below, sector returns have been declining even in a relatively high oil price environment in 2010-mid 2014. With further pricing pressure to come, service companies need to respond by restructuring as price cuts risk pushing returns to unsustainably low levels, below the cost of capital.

Figure 139: EuroOilServiceCo returns declining since 2008



Source: Company, UBS estimates

Restructuring announcements so far have included significant headcount reduction and the downsizing in capacity. Furthermore, there have been two large-scale mergers announced; the proposed acquisition by Halliburton of Baker Hughes and Schlumberger's $15bn purchase of Cameron. Interestingly, alliances and joint ventures have also emerged as an answer to the current downturn, with the industry rediscovering the benefits of standardisation, collaborative work and early engineering to bring costs down and improve speed to market. We view this trend positively and see the best-placed contractors as those offering a more integrated and global service, such as the diversified oil service companies and tier one general contractors.

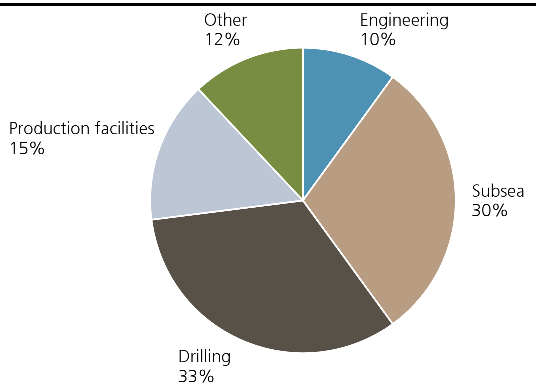
Figure 140: Select oilfield service alliances

Partners	Date	Scope
Aker Solutions / Baker Hughes	22/04/15	Subsea, processing systems, well completions & artificial-lift technology.
Aker Solutions / Baker Hughes	19/06/15	Early engineering phase of field development.
Petrofac / Mc Dermott	26/02/15	Subsea construction
Saipem / Chiyoda + Xodus	09/10/14	Studies, engineering & consultancy, mainly focused on the early phase.
Subsea 7 / OneSubsea	13/07/15	Subsea Processing Systems, SURF and Life of Field
Subsea 7 / KBR	16/07/15	Concept and FEED services.
Technip / FMC	22/03/15	FEED, SURF, SPS, LoF, joint R&D
Tenaris / Sandvik	16/07/14	Joint supply of corrosion resistant alloy OCTG materials and technology.
McDermott / GE	15/01/15	Front-end offshore field development

Source: UBS research, company press releases

A lot of discussion around cost efficiencies has been focused on large offshore field developments, understandably so given the large absolute level of investment. However, on a per barrel basis, offshore developments typically have a lower cost per barrel because of the sheer size of the reserves. The most significant components for an offshore field development are subsea equipment and installation and drilling costs, so while the oil companies have tried to extract more value out of the entire supply chain, savings in drilling and subsea equipment and installation will have a larger impact on the overall economics of a project.

Figure 141: Cost breakdown for generic offshore development

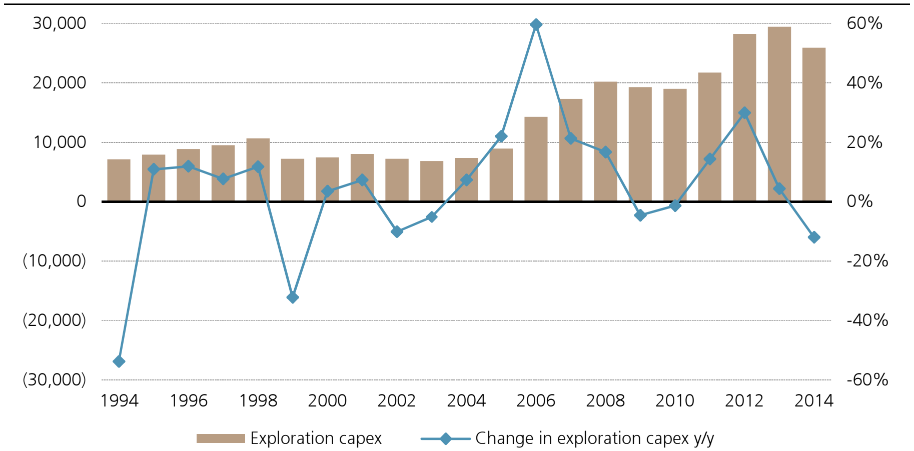


Source: UBS research

Capital suppliers

In most areas of capital supply, pricing has started to decline albeit at different paces.

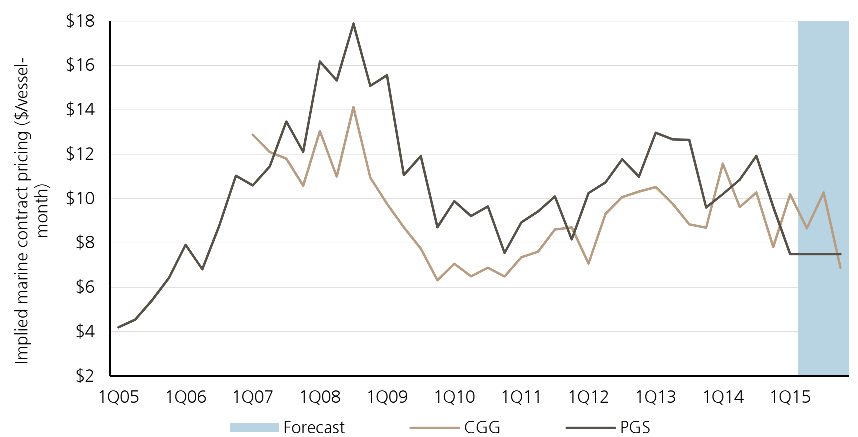
Figure 142: Exploration and development spend 1994-2014 - $m



Source: UBS, GlobalOilCo FAS69 development spend, comprises of BP, Chevron, ExxonMobil, Royal Dutch Shell, Total, Eni, Repsol, Statoil & Suncor Energy

- **Seismic pricing down ~40% from 2013 peak. Segment is quick on the way down but slow on the way up.** Seismic spend, because of its discretionary nature, is usually the first to see a pressure on the supply chain. Pricing and activity declines began in 2014 and continued into 2015 and, in our view, the E&P industry is unlikely to increase exploration spend in 2016. There is a long list of deferred projects and companies seeking to grow reserves may be able to do so more cheaply by pursuing M&A. We think this trend will become increasingly clear as majors firm up budgets in 2H16. In addition to weak demand, the seismic market remains oversupplied despite evidence of capacity rationalisation among some players (-5.2% decline in vessel count in 2015) due to larger and more efficient new-build vessels (streamer count up 5.1% in 2016). All in all we expect 2016 pricing to be flattish over 2015. Opening of new areas such as Mexico could potentially bring incremental demand although the recent early licensing rounds has been underwhelming.

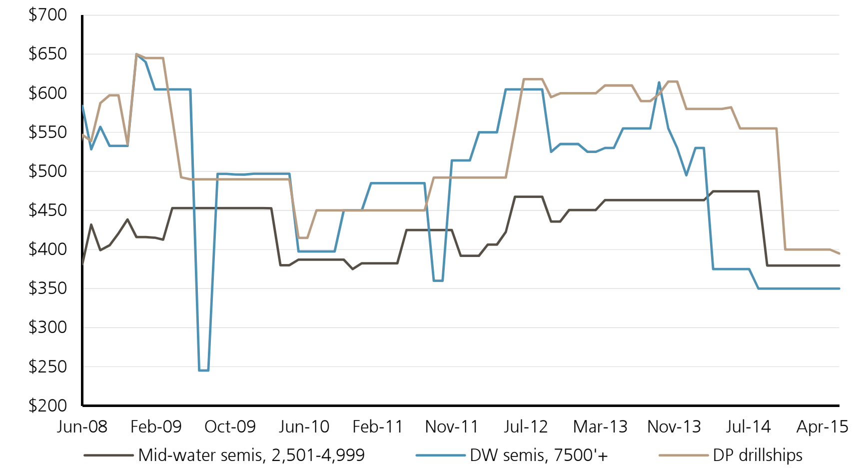
Figure 143: Marine contract price - $m per vessel month



Source: UBS estimates

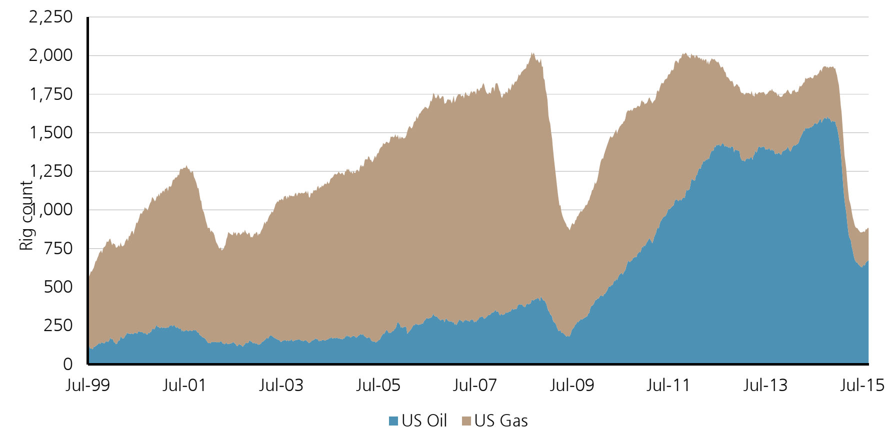
- **Offshore drilling – dayrates down 40% or more, no demand:** Dayrates have declined 40% or more for the few rigs that have been able to find a new contract. Offshore rig demand has almost evaporated with little demand for exploration activity and short-term contracts for some development or plug and abandonment work. We expect dayrates to remain depressed for the next two years, or longer.

Figure 144: Semi-subs and Drillships dayrates



Source: IHS Petrodata

Figure 145: US Rig count



Source: Baker Hughes

- **Onshore drilling – pricing down 30%:** A limited number of rigs have returned to work in the US land rig markets. However, the few rigs that have had rig renewals have had price declines of roughly 30%. We believe that dayrates have bottomed and will remain at these levels until there is a more meaningful rig count recovery which would imply oil prices would need to return to the $60-$65/bbl level.
- **US Pressure pumping (frac) – pricing down 30%** – Pricing for US pressure pumping has declined by 30% and could decline modestly further. Pricing has begun to stabilize; however, any declines in the US land rig count would lead to further pricing pressure. Today pressure pumping utilization stands at roughly 50%.

Engineering & Construction

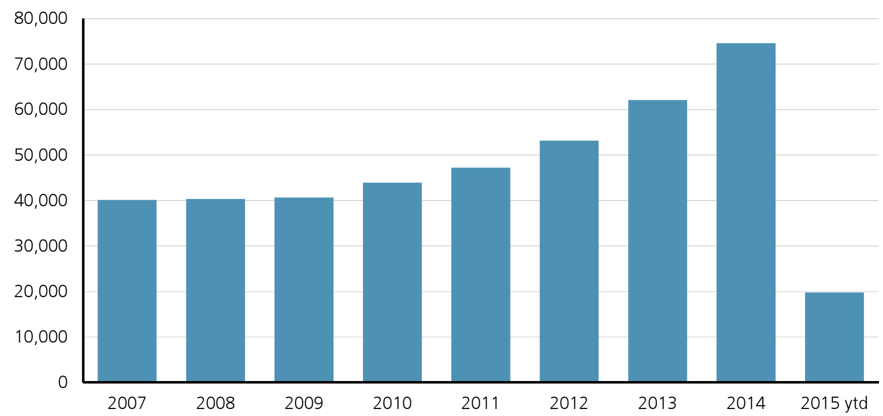
Engineering and construction (E&C) encompasses many activities ranging from front-end engineering and detailed design through to construction and commissioning.

- **Engineering – limited pricing pressure but mainly a reimbursable model:** Front-end engineering and design is a leading indicator for E&C work. FEED activity is pulled between two forces, with on the one hand new projects sanctions continuing to be delayed as operators struggle to adapt project costs to the new oil price environment, while on the other hand, early engineering has been consistently put forward as a response to the downturn in the past months by the industry. This is very well illustrated by Wood Group, which recently indicated that despite projects delays, it is engaged in a high volume of early engineering work, with some clients looking to start or restart projects, suggesting that some activity is still going on.
- **Construction** activity has slowed down in the first part of the year with a low level of order intake for Saipem and Technip compared to 2014, which was a record year. Yet, there is still some activity in onshore construction in the Middle East where large contracts continue to be awarded, albeit at a slower rate. Petrofac, which is one of

the biggest players in the area, indicated that it sees continuous investment from customers on large projects.

- **Subsea construction pricing relatively resilient so far but should start feeling the pain** after having held up quite well in 2014 and so far in 2015 as contractors have benefitted from backlog signed in previous years. We anticipate subsea pricing to decline in the coming months due to low demand as the timing of new awards to market remains uncertain. However, big subsea contractors like Technip and Subsea 7 continue to see new projects sanctions in the coming 12-18 months in some key areas, although at a slower pace (Mozambique, Brazil). We also think that provided they deliver material cost reductions, newly-formed alliances in subsea will be a relevant trend to watch out for in the months ahead, as they could support new FIDs going forward.

Figure 146: Aggregate order intake ($m) for both onshore and offshore?



Source: Company reports. Comprises of Subsea 7, Aker Solutions, Petrofac, Saipem, Amec, Technip; Note: 2015 Ytd aggregate order intake excludes Amec as it has not yet reported 1H15 results.

Shipyards

We see 5-15% price cuts for newbuild rigs and offshore production platforms: We expect demand for newbuild rigs to be virtually non-existent for the next 2-3 years due to excess supply and falling day rates. We believe the solvency of some of the smaller, less established offshore drilling companies is questionable and see heightened risk of delivery delays and cancellation of orders, especially for rigs that are not yet chartered. We anticipate both Korean and Singaporean yards to be negatively affected by these trends.

Demand for newbuild offshore production platforms are also likely to remain severely depressed in 2016 given the weak oil price. However, we don't think activity halts completely. We believe projects currently in progress and those with low hurdle rates will be sanctioned, albeit delayed, leaving yards with little work in 2016. Furthermore, we believe the yards' effort to clean-up their problem legacy projects to be a drag not only on the yards' profitability but also restricts their ability to bid for new orders and restructure as resources are focused to complete these.

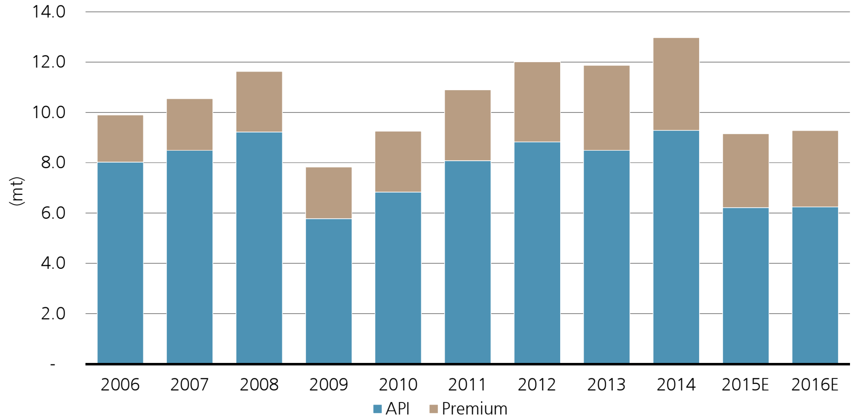
We remain bearish on the shipbuilders in 2016 as the low oil price will likely result in little new orders and cashflows are pressured due to project delays and cancellations. On top of this, the yards continue to work through legacy problem projects.

Equipment

- **Subsea equipment pricing under pressure –** We expect to see modest price declines in subsea equipment given the current oil environment. Given relatively thin margins for the subsea equipment, to begin we would expect price declines of only 3-5%. Additionally, standardisation should continue to be the theme to reduce costs for the oil companies.

- **Oil country tubular goods (OCTG) – US prices down 20% from peak and more weakness to come.** Prices and volumes should continue to deteriorate during the second half of 2015 due to the low level of activity in the US onshore market, which accounts for more than 50% of the global market, as well as to continued destocking in the US and Saudi Arabia. We note that the US rig count has stabilized in recent weeks to a rather low level, but given the prolonged oil price downturn, we do not anticipate any fundamental improvement in the market as we go into 2016. However, the end of destocking in the US and Saudi Arabia, which is expected towards the end of the year, should mechanically lead to a slight improvement in volumes and pricing next year.

Figure 147: Global OCTG demand



Source: UBS estimates, Pipelogix excludes Russia and China, Vallourec

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M&A

2014 saw a relatively healthy upstream M&A market for the bulk of the year as high oil prices and benign capital markets oiled the wheels of deal flow. Clearly, things changed in November as oil prices collapsed. The nature of the market has changed radically since then. Deal flow has slowed considerably, stymied by the inevitable divergent views of buyer and seller and the severity of the downturn, which has led to even the best-financed potential predator to be somewhat cautious in risking its balance sheet. Also of note is the backwards step taken by the NOCs through 2014, especially the Chinese, who had been major market participants in prior years. With global M&A activity dominated by the North American region, US onshore has itself increasingly been dominated by Independents acquiring other independents (they are valued differently to the Majors) and also the emergence of private equity, which appears to have a different rate of return/investment criteria than the traditional levels demanded in the industry.

Two quite strategic deals, Repsol-Talisman and Shell-BG, have been announced since the oil price downturn, with Repsol-Talisman completing in May 2015 and Shell-BG expected to close in early 2016. Both were deals the acquirer had been looking to do for some time and took advantage of the downturn to get it done. Notably Repsol and Shell entered the downturn with two of the strongest balance sheets in the sector. Furthermore both deals are essentially *'grow to shrink'* in nature, whereby the pro-forma combination will be significantly pruned after the deal closes, emphasising that strategic portfolio re-positioning rather than scale is the motive behind the deal (whatever the merits). The recently announced proposal by Schlumberger to acquire Cameron has something of the same theme, we believe – something strategic in nature facilitated by a tactical opportunity. Historically speaking, there has often been a trend of 'me too' in the sector, so it might be reasonable to expect further deals of this type being announced over the course of this down-cycle.

More generally, perceived wisdom is that as the Majors cut into organic spending, which we expect them to do, they are more likely to supplement that with M&A activity to allow then to grow (pithily described as 'drilling on Wall Street'). Furthermore, the bottom-of-the-cycle conditions signal opportunity, tactically, to take advantage of the distressed balance sheets of potential prey and predators' relative share-price outperformance. To date, capital has continued to flow to the industry (bank debt, private equity, equity issuance in some cases), albeit sub-investment grade debt spreads have risen and investment ratings have been cut. To put the continuing availability of capital into perspective, in 1Q the US E&P sector was able to raise a remarkable $12bn of equity from over 20 financings. This has acted to close a significant portion of the funding gap. Another window of opportunity may soon emerge. With the persistence of low prices the autumn could well see large cuts in lenders' oil price assumptions and modelling forcing reductions in available credit forcing work-outs or pushing asset owners into the arms of buyers. The question is whether the assets that end up being distressed are the assets predators would wish to acquire. We do believe that large relatively well financed players will not wish this cycle to complete without at least trying to extract some value from it and the current market feels very tense as buyers and sellers assess the outlook.

The Majors have been active portfolio sellers over the past few years, selling non-core upstream positions and slimming down Downstream and Midstream. This has become more active as the companies seek to balance cash in and cash out against the backdrop of elevated organic spending. With the oil price having dropped, the prospects for selling E&P assets is diminished. But we do expect to see continued activity in the remaining segments taking advantage of attractive refining profitability in the Downstream and low interest rates and active/tax advantaged infrastructure investors in the Midstream.

In summary we would highlight the following trends:

- The international Majors and well-financed larger E&Ps may seek to take advantage of distress to add new opportunities and to supplement portfolio. Only ExxonMobil among the Majors has real balance sheet power, however, in the way we might have expected a Major to look in past cycles. But while absolute share prices have been battered across the sector, the larger-cap names have fared the best relatively speaking, giving them a strong position in terms of cash/shares offers (as Shell showed).
- The US onshore seems likely to remain in focus. It is an active area for a wide range of E&P companies where merger and acquisition is the lifeblood. Moreover the Majors have an obvious portfolio incentive to access US onshore – it is increasingly obvious that core acreage is very economic and its shorter-cycle times help with investment flexibility, while the US is widely seen as politically and fiscally stable. The deterring factor maybe the poor track-record to date, selling at the wrong time and often re-acquiring in the wrong place; joining with the wrong partner; or plain over-paying.

- The Chinese majors seem likely to continue to be quiet when compared with their historical levels of M&A activity having probably reached some form of critical mass overseas and are probably more restricted by their balance sheets. Focus will now turn to development with deals. The Indian majors, however, may become more active, especially in their own 'backyard' of East Africa.

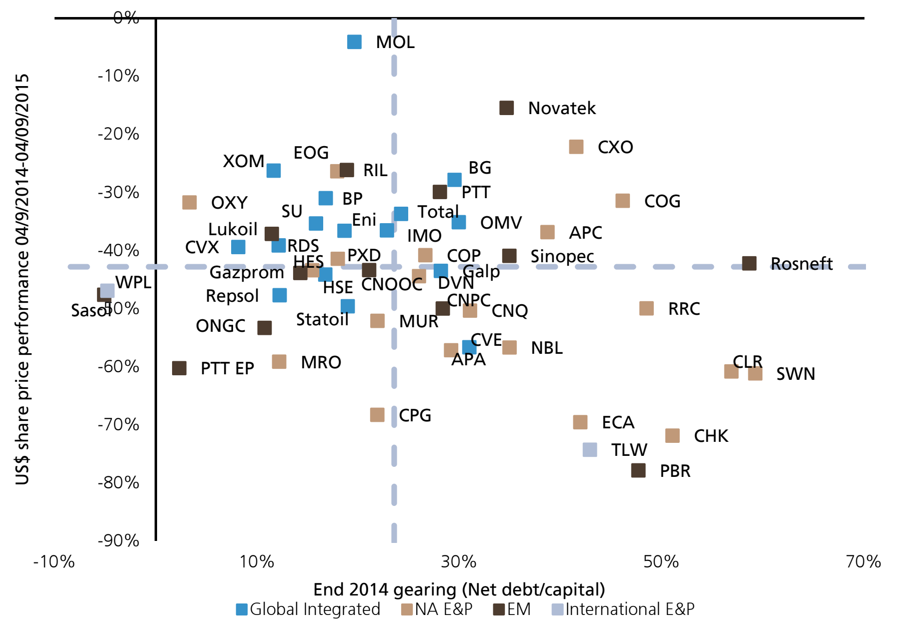
- The Russian majors will look to tidy up portfolios, selling minority stakes and introducing minority partners, aligning their interests with key downstream stakeholders or resource/technology providers. The introduction of sanctions on Russia in the aftermath of the annexation of the Crimea slowed activity down considerably, but recent activity (Rosneft-BP; Rosneft-ONGC; Gazprom-OMV; Gazprom-BASF) appears to demonstrate that deals can still get done.

- Opportunity may reveal itself in Petrobras' restructuring. The Downstream and Gas & Power divisions will look to unlock value but we think the real interest will come in the Upstream. Domestically, the prize would be in the pre-salt, although currently it is not planned to sell any producing or near-development pre-salt assets. This could change, however, and would be highly prized by the Majors. Internationally, Petrobras' deepwater position in the GOM, for instance, might attract interest.

- Within the international E&P there may be some acquirers (for instance Woodside, the Majors, some NOCs) and it looks like there may be a pipeline of assets becoming available – spin-outs from other deals (eg, Repsol and Shell); other Majors restructuring and portfolio managing (eg, Eni); or distressed E&Ps which have claimed a disproportionate amount of the acreage and the exploration successes over the last cycle. Consolidation among the smaller E&Ps (either between them or of them) seems increasingly likely, although the deals always look complicated from an approvals perspective (less so from a capital gains perspective these days).

- There have been two large proposed transactions announced in the services space – Halliburton's acquisition of Baker Hughes and Schlumberger's acquisition of Cameron. It may take the remainder of 2015 for expectations to adjust to the new reality and so more deal activity may have to wait until 2016/17. But given the need for the industry to adjust its cost base, consolidation does seem inevitable. In Offshore Drilling we think smaller companies with new rig fleets may be targets, while onshore Land Drillers may prefer to build themselves rather than acquire. Given pressure on margins we anticipate consolidation in pressure pumping. In Equipment we may see attempts to diversify activity and the Diversified Service companies may also look to add new niche activities. We don't see the large players wishing to commit more capital in Seismic Acquisition especially because the barriers to entry are low. In Subsea Construction further concentration seems unlikely in our view.

Figure 148: Comparison of gearing and share price performance in sector



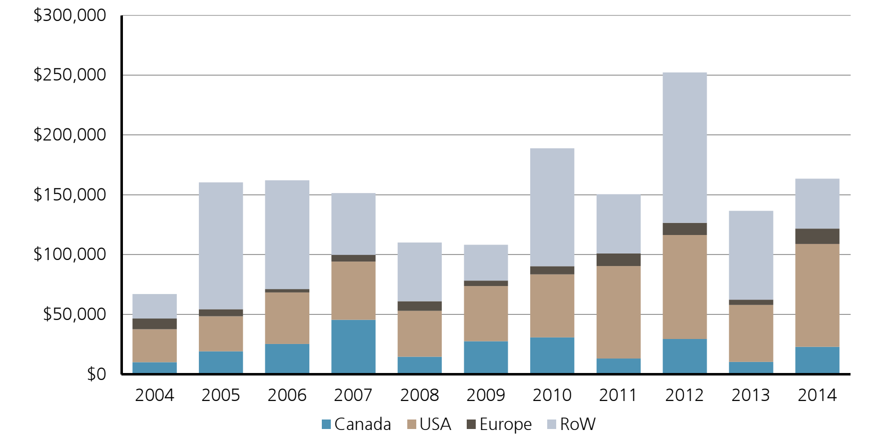
Source: UBS

2014 in review

2014 recorded the third highest total M&A transaction total by value since the end of the mega-merger period. It was only superseded by 2010, which saw the zenith of activity of the Chinese, and 2012, which saw the big Russian deals done. This is all the more impressive because of the slowdown in deal activity in the second half of the year. Unsurprisingly the market was dominated by the US, which accounted for more than half the total by value. Worldwide deal metrics were on average at >$9/boe, having averaged ~$5/boe in the previous 5 years. Again this was skewed by US deals that have typically come with quite low reserve boe but very large resource potential (and hence are often accompanied by acreage or adjusted flowing bbl metrics).

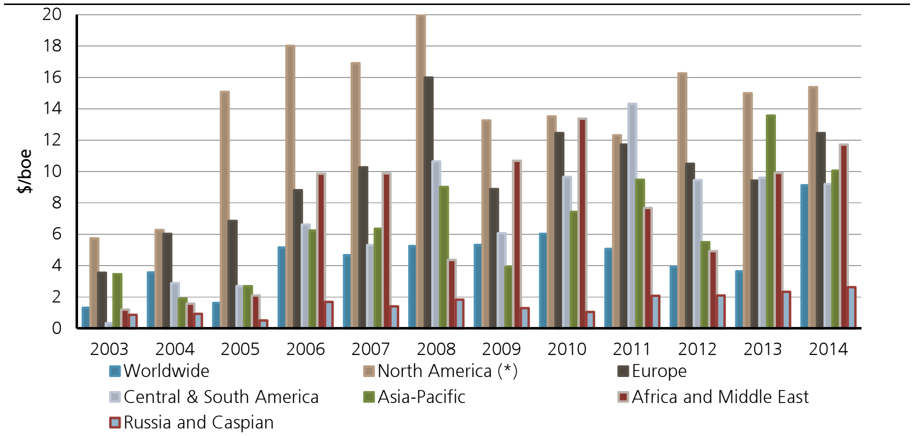
The apparent pullback of the NOCs saw a fall in the mega deals often apparent in the ROW metrics as did the sanctions effect on Russia activity – obviously Russia being a vast resource holder. The slowdown in maturation of new LNG projects is also a reason for the slowdown in international deals as sanction is often accompanied by the entry of offtakers into the project as upstream partners.

Figure 149: Upstream M&A by value and region ($M)



Source: UBS estimates

Figure 150: Global upstream M&A by reserve value ($/boe)



Source: UBS estimates

Figure 151: Largest M&A transactions since 1 January 2014

Date Announced	Buyer	Seller	Deal Level	Region	Value ($bn)	Reserves (Mboe)	$/boe	Notes
Top 10 2014 deals								
Dec-14	Repsol	Talisman	Corporate	Worldwide	15.5	893	10.99	Repsol bulks up in the upstream and deepens in the OECD
Sept-14	Encana	Athlon	Corporate	US	7.8	173	36.60	Encana adds Midland Basin Permian acreage
Mar 14	Alfa/Letter One	RWE DEA	Asset	Europe	7.1	467	13.33	Former TNK owners entry into the North Sea – although subject to UK Gov't challenge on control
Jul 14	Whiting	Kodiak	Corp	US	6.1	167.2	33.52	Consolidation in the Bakken
Oct 14	Southwestern	Chesapeake	Asset	US	5.0	221	19.82	Marcellus/Utica
Jul 14	Breitburn Energy	QR Energy	Corp	US	3.4	109.1	30.03	MLP based transaction adding oil and gas assets primarily in the southern US
May 14	Encana	Freeport McMoran	Asset	US	3.1	58.8	52.22	Eagle Ford acquisition
Feb 14	CNQ	Devon	Asset	Canada	2.8	170	12.88	Western Canadian conventional oil and gas assets
Dec 14	Woodside	Apache	Asset	Australia/Canada	2.75	215	12.58	Interests in Kitimat and Wheatstone LNG
Jun 14	Det Norske	Marathon	Asset	North Sea	2.70	136	19.68	Det Norske deepens in Norway as Marathon exits
Major 2015 deals YTD								
Apr 14	Royal Dutch Shell	BG Group	Corporate	Worldwide	85.6	3613	10.65	Deepwater Brazil and LNG consolidation
May 15	Alfa	Pacific Rubiales	Corporate	South America	6.1	279	12.54	Attempt to acquire remaining stake: but bid since dropped on shareholder opposition
May 15	Noble	Rosetta	Corporate	US	3.8	282	8.99	Permian Basin
July 15	WPX	RKI	Corporate	US	2.7	102	18.9	Permian Basin

Source: UBS, IHS Herold

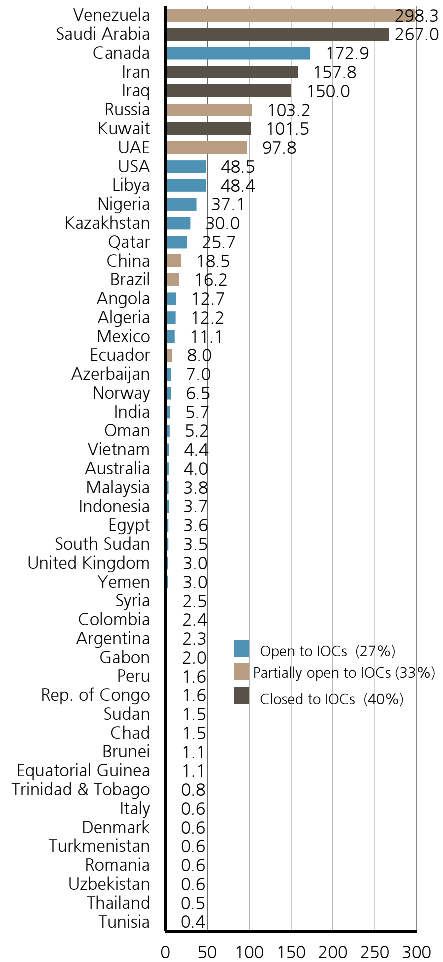
Opportunity / reserves

Access to opportunity remains the key challenge for the industry. Resource nationalism and the advance of unconventional competition makes this increasingly difficult for the Majors to achieve, while constraints on conventional exploration spending in the current price environment make it difficult to see how access through the drill bit over the next 2-3 years will be anything more than mediocre.

The key tools for access are, we believe, technology and know-how. We separate the two because, although related, they are different. One talks to the ability of companies to find, develop and produce resources, and the other to use that ability and turn it into a real project. Hence, access can be through the drill bit or negotiated, but in each case the Majors need to bring some value. While capital clearly has more value in today's constrained environment than in recent years, we don't believe it's the sole way in which the IOCs can competitively position themselves. Access also needs to be screened with a strategic view of the world of energy – balancing technological, political and regulatory opportunities and risks. The opening up of the unconventional onshore by the US Independent E&P companies highlighted a strategic blind spot among the Majors as the success in the last decade with the drill bit by the independent international E&Ps also appeared to.

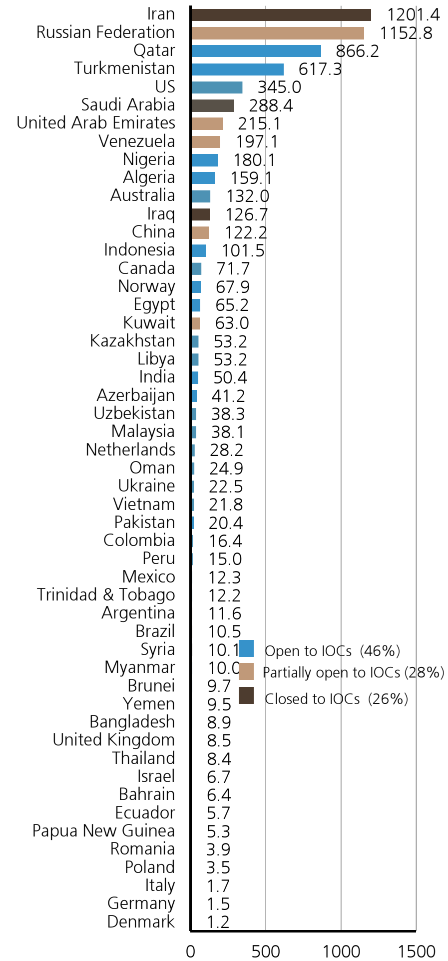
A further issue is facing the industry, which we expect to garner increasing attention as we approach full-year reporting season. With Brent forecast by us to average ~$55/bbl in 2015, some $45/bbl below the FY14 average implicit in the latest SEC oil & gas disclosures, we are facing the prospect of significant negative reserve revisions. The SEC requires companies to use oil and gas prices based on the average of the previous 12 months to calculate their proved reserves. The lower prices that they will be using for year-end pricing are likely to give rise to a meaningful quantity of reserves cut off by virtue of them being uneconomic. This may be partly offset by increased entitlements under PSC calculations. Furthermore, the SEC permits undeveloped reserves to be classified as proved if a development plan provides for drilling within five years, with some flexibility if specific circumstances allow. The slowdown in oil company spending and deferment of projects risks PUDs also generating significant negative reserves revisions at year-end.

Figure 152: Access to reserves (oil, Bn bbl)



Source: UBS, BP Statistical Review of World Energy

Figure 153: Access to reserves (gas, Tcf)



Source: UBS, BP Statistical Review of World Energy

Figure 154: Production & reserves of IOCs

	SEC production		Total production	SEC 1P reserves			2P reserves	Resources	Reserve life (years)		
	Oil (kboe/d)	Gas (Mcf/d)	(kboed/d)	Oil (Mbbls)	Gas (Bcf)	Total 1P (Mboe)	(Mboe)	(Mboe)	1P	2P	Resource
Anadarko Petroleum	422	2,605	856	1,408	8,699	2,858			9.1	-	-
Apache	389	1,589	654	1,356	6,239	2,396			10.0	-	-
BG Broup	222	2,304	606	1,688	11,550	3,613	6,525	17,016	16.3	29.5	77.0
BP	1,918	7,562	3,222	9,818	44,696	17,523	n/a	84,000	14.9	-	71.4
Cabot Oil & Gas	11	1,392	243	53	7,082	1,233			13.9	-	-
Canadian Natural Resources	531	1,554	790	4,511	6,001	5,511			19.1	-	-
Cenovus	203	488	285	2,246	796	2,379			22.9	-	-
Chesapeake	207	3,000	707	687	10,692	2,469			9.6	-	-
Chevron Corp	1,710	5,167	2,571	6,249	29,116	11,102			11.8	-	-
CNOOC	959	1,329	1,180	3,239	7,268	4,450			10.3	-	-
Concho Resources	72	239	112	370	1,601	637			15.6	-	-
ConocoPhillips	893	4,463	1,637	5,489	20,500	8,906			14.9	-	-
Continental	122	313	174	866	2,908	1,351			21.3	-	-
Crescent Point	128	74	141	490	227	528			10.3	-	-
Devon Energy	353	1,921	674	1,473	7,687	2,754			11.2	-	-
Encana	531	1,554	790	4,511	6,001	5,511			19.1	-	-
Eni	830	4,219	1,598	3,226	18,545	6,602	13,000	34,500	11.3	22.3	59.1
EOG Resources	369	1,387	600	1,607	5,343	2,497			11.4	-	-
ExxonMobil	2,104	11,951	4,096	13,713	69,338	25,269			16.9	-	-
Galp	23	9	25	203	174	232	638	7,125	25.6	70.4	785.8
Gazprom	1,400	44,251	8,794	10,616	666,664	121,802			37.9	-	-
Hess	244	540	334	1,117	1,881	1,431			11.7	-	-
Husky	235	621	338	827	2,627	1,265			10.2	-	-
Imperial Oil	282	168	310	3,854	627	3,959			35.0	-	-
Lukoil	1,969	1,930	2,291	13,461	23,219	17,406			20.8	-	-
Lundin Petroleum	19	35	25	173	89	187			20.3	-	-
Marathon Oil	323	808	458	1,768	2,580	2,198			13.1	-	-
MOL	42	314	95	200	1,000	370	555	1,505	10.6	16.0	43.3
Murphy Oil	152	446	226	472	1,705	757			9.2	-	-
Noble Energy	134	992	300	432	5,833	1,404			12.8	-	-
Novatek	124	6,009	1,237	897	67,250	12,322			27.3	-	-
Occidental Petroleum	447	907	598	2,132	4,127	2,819			12.9	-	-
OMV	158	848	310	616	2,659	1,090	1,813	11,613	9.6	16.0	102.7
ONGC	632	2,681	1,047	3,750	15,706	6,367			16.7	-	-
Petrobras	2,042	2,504	2,459	11,117	12,138	13,140			14.6	-	-
PetroChina	2,590	2,898	3,073	10,593	71,098	22,851			20.4	-	-
Pioneer Natural	133	423	203	521	1,669	799			10.8	-	-
PTT Public (PTT E&P)	110	1,564	352	187	3,814	777			6.1	-	-
Range Resources Corp.	63	786	194	565	6,923	1,718			24.3	-	-
Reliance Industries	27	1,186	225	18	3,045	526			6.4	-	-
Repsol	134	1,244	356	441	6,164	1,539	n/a	4,270	11.9	-	32.9
Rosneft	4,159	5,486	5,075	25,364	50,814	33,997			18.4	-	-
Royal Dutch Shell	1,490	9,858	3,190	6,130	40,316	13,081	n/a	31,000	11.2	-	26.6
Sasol	5	346	62	9	1,461	252			11.1	-	-
Sinopec	893	1,951	1,229	2,772	6,715	3,930			8.8	-	-
Southwestern Energy	1	2,096	351	156	9,809	1,791			14.0	-	-
Statoil	975	4,288	1,739	2,345	16,919	5,359	n/a	27,400	8.4	-	43.2
Suncor Energy	615	17	618	4,672	45	4,679			20.7	-	-
TOTAL	1,036	6,066	2,159	5,303	17,767	11,521	15,665	39,000	14.6	19.9	49.5
Tullow Oil	63	75	75	308	226	345			12.6	-	-
Woodside Petroleum	55	1,233	261	125	5,264	1,048	1,339	1,743	11.0	14.1	18.3

Source: Company data, UBS, based on 2014 disclosure. Note: Tullow = proven + probable. Data includes affiliates

Figure 155: 2014 oil production by region (kb/d)

	USA	Canada	Latin America	Europe	North Africa	Sub-Saharan Africa	Middle East	Russia	FSU (ex-Russia)	APAC	Total
Anadarko Petroleum	319	-	-	-	69	23	-	-	-	-	411
Apache	193	24	-	62	88	-	-	-	-	21	387.45
BG Broup	-	-	81	66	11	-	-	-	52	12	222
BP	410	-	94	94	51	181	152	821	98	26	1,928
Cabot Oil & Gas	11	-	-	-	-	-	-	-	-	-	11
CNRL	-	501	-	17	-	12	-	-	-	-	531
Cenovus	-	203	-	-	-	-	-	-	-	-	203
Chesapeake	206	-	-	-	-	-	-	-	-	-	206
Chevron Corp	456	41	100	52	-	361	78	-	-	623	1,710
CNOOC	50	48	25	88	77	-	37	-	-	631	956
Concho Resources	72	-	-	-	-	-	-	-	-	-	72
ConocoPhillips	460	192	-	134	8	-	-	-	-	90	883
Continental	122	-	-	-	-	-	-	-	-	-	122
Crescent Point	16	112	-	-	-	-	-	-	-	-	128
Devon Energy	267	87	-	-	-	-	-	-	-	-	353
Encana	50	37	-	-	-	-	-	-	-	-	87
Eni	62	-	22	166	252	231	22	-	61	11	828
EOG Resources	363	6	-	0.1	-	-	-	-	-	-	369
ExxonMobil	454	301	-	184	-	489	-	245	-	438	2,111
Galp	-	-	20	-	-	4	-	-	-	-	24
Gazprom	-	-	-	-	-	-	-	1,400	-	-	1,400
Hess	150	-	-	38	11	43	-	-	-	3	244
Husky	-	228	-	-	-	-	-	-	-	7	235
Imperial Oil	-	282	-	-	-	-	-	-	-	-	282
Lukoil	-	-	-	-	4	-	122	1,790	53	-	1,969
Lundin Petroleum				18				1			19
Marathon Oil	186	50	-	26	7	31	-	-	-	-	301
MOL	-	-	-	28	2	1	2	8	-	2	43
Murphy Oil	68	28	-	-	-	-	-	-	-	54	150
Noble Energy	89	-	-	0.4	-	41	-	-	-	2.2	133
Novatek	-	-	-	-	-	-	-	124	-	-	124
Occidental Petroleum	325	-	29	-	-	-	179	-	-	-	533
OMV	-	-	-	116	18	-	6	-	9	10	159
ONGC	-	-	42	-	14	-	-	35	-	541	632
Petrobras	23	-	2,096	-	-	-	-	-	-	-	2,118
PetroChina	-	-	-	-	-	-	Overseas (no granular disclosure):		287	2,272	2,559
Pioneer Natural	127	-	-	-	-	-	-	-	-	-	127
PTT Public (PTT E&P)	-	-	-	-	-	-	2	-	-	108	110
Range Resources Corp.	63	-	-	-	-	-	-	-	-	-	63
Reliance Industries	-	-	-	-	-	-	-	-	-	27	27
Repsol	27	-	74	5	16	-	-	-	-	11	134
Rosneft	-	-	-	-	-	-	-	4,159	-	-	4,159
Royal Dutch Shell	271	168	46	173	-	239	265	93	-	229	1,484
Sasol	-	-	-	-	-	5	-	-	-	-	5
Sinopec	-	-	48	-	51	-	-	29	13	848	988
Southwestern Energy	1	-	-	-	-	-	-	-	-	-	1
Statoil	77	27	56	591	20	167	-	6	28	-	971
Suncor Energy	-	560	-	48	-	-	7	-	-	-	615
TOTAL	27	12	50	165	32	490	192	33	3	30	1,034
Tullow Oil				1		56					57
Woodside Petroleum	-	-	-	-	-	-	-	-	-	57	57

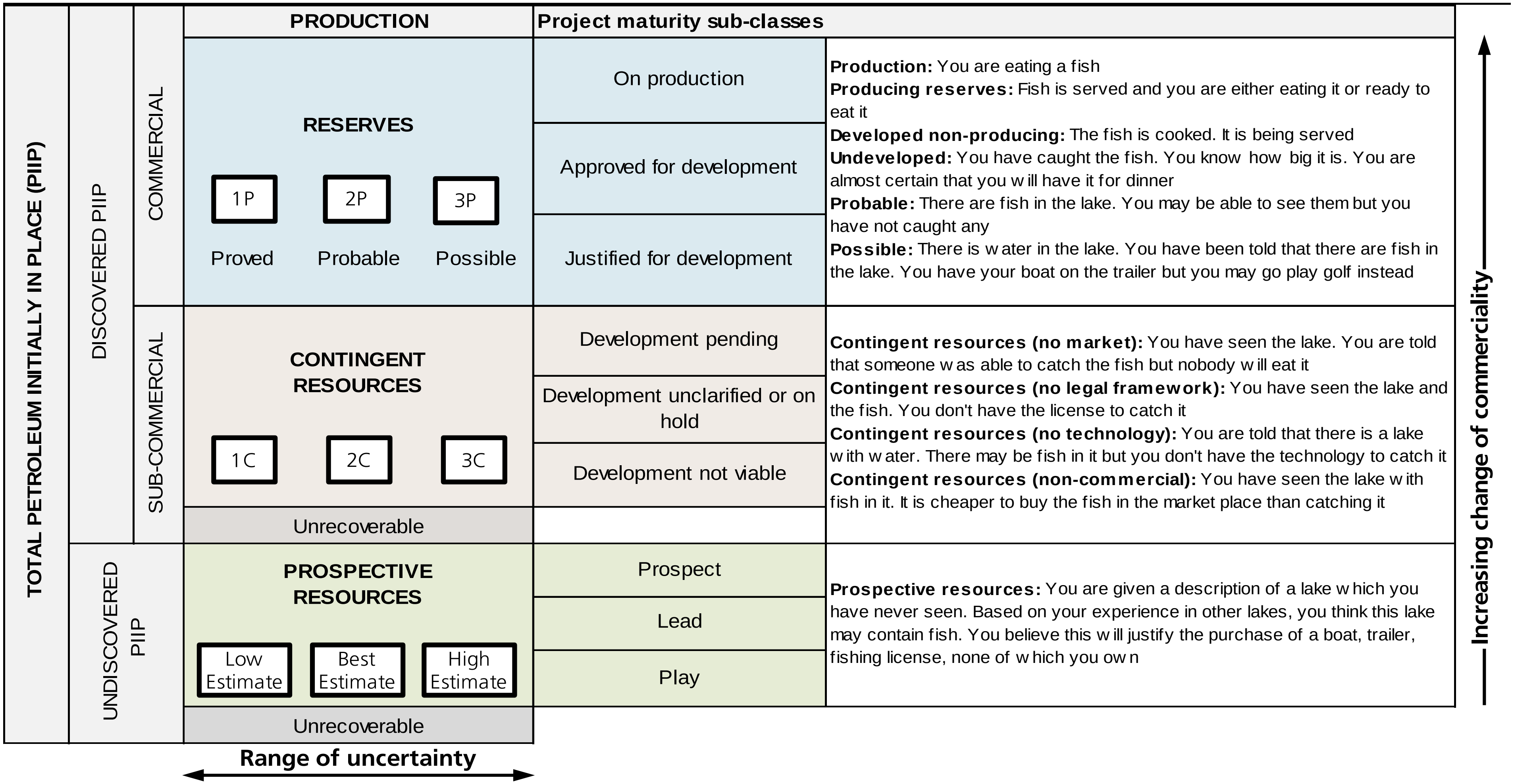
Source: Company data, UBS, based on 2014 disclosure. Note: production on company reported basis, may differ from SEC/FAS69 production as disclosed on previous page.

Figure 156: 2014 natgas production by regional market – Mcf/d

	European Hubs	Russia/FSU	North America	Other local	LNG feedstock	Total
Anadarko Petroleum	-	-	2,589	-	-	2,589
Apache	56	-	914	584	-	1,554
BG Broup	240	198	234	1,248	384	2,304
BP	403	1,084	1,530	1,054	3,029	7,100
Cabot Oil & Gas	-	-	1,392	-	-	1,392
Canadian Natural Resources	7	-	1,526	21	-	1,554
Cenovus	-	-	488	-	-	488
Chesapeake	-	-	3,000	-	-	3,000
Chevron Corp	173	-	1,250	3667	78	5,168
CNOOC	51	-	257	1,022	-	1,330
Concho Resources	-	-	239	-	-	239
ConocoPhillips	461	-	2,252	1230	-	3,943
Continental	-	-	313	-	-	313
Crescent Point	-	-	74	-	-	74
Devon Energy	-	-	1,920	-	-	1,920
Encana	-	-	2,349	-	-	2,349
Eni	1,114	203	165	2,172	571	4,224
EOG Resources	9	-	981	363	-	1,353
ExxonMobil	2,816	293	3,715	4152	169	11,145
Galp	-	-	-	17	-	17
Gazprom	-	43,451	-	-	800	44,251
Hess	36	-	165	313	-	513
Husky	-	-	507	114	-	621
Imperial Oil	-	-	168	-	-	168
Lukoil	-	1,930	-	-	-	1,930
Lundin Petroleum	27	-	-	8	-	35
Marathon Oil	40	-	311	445	-	796
MOL	301	-	-	29	-	330
Murphy Oil	-	-	245	201	-	446
Noble Energy	-	-	517	475	-	992
Novatek	-	6,009	-	-	-	6,009
Occidental Petroleum	-	-	660	434	-	1,094
OMV	704	-	-	145	-	848
ONGC	-	62	-	2,619	-	2,681
Petrobras	-	-	-	2,968	-	2,968
PetroChina	-	407	-	7,891	-	8,298
Pioneer Natural	-	-	352	-	-	352
PTT Public (PTT E&P)	-	-	-	1,148	-	1,148
Range Resources Corp.	-	-	786	-	-	786
Reliance Industries	-	-	-	1,186	-	1,186
Repsol	3	38	38	489	668	1,237
Rosneft	-	5,486	-	-	-	5,486
Royal Dutch Shell	2,932	-	1,577	1,581	3,169	9,259
Sasol	-	-	70	276	-	346
Sinopec	-	-	-	1,963	-	1,963
Southwestern Energy	-	-	2,099	-	-	2,099
Statoil	3,741	-	778	67	189	4,775
Suncor Energy	-	-	17	-	-	17
TOTAL	1,016	1,101	278	1,515	2,154	6,063
Tullow Oil	67	-	-	2	-	70
Woodside Petroleum	-	-	-	223	936	1,159

Source: Company data, UBS, based on 2014 disclosure. Note: production on company reported basis, may differ from SEC/FAS69 production as disclosed on previous page.

Figure 157: PRMS resources classification system (and a nice analogy)



Source: Society of Petroleum Engineers

Upstream projects database

Large projects have traditionally been the primary building blocks of production for the majors. However, they are one that is at risk of becoming the major casualty of the current downturn, caught in the crossfire of OPEC's alleged "war on shale" and increasingly marginalised in the face of more flexible (and increasingly it appears more economic) US shale portfolios. Nonetheless, these increments remain a major driver of the industry's production levels and are key for the oilfield service industry's bidding and work backlog. UBS has for many years maintained its own database of large projects identified by size, geography, type, status and timings and this is summarised below.

With this publication we have updated our upstream projects database (last published in March 2015), adding new projects that have been announced or now appear to be progressing, and looking at where start-ups and FIDs have been delayed. We estimate 24 projects came on stream in 2014 adding 4.4Mboe/d of production at peak levels, and forecast another 25 projects starting up over the course of 2015 adding 3.3Mboe/d combined peak production. Of the 2015 startups, 1.6Mboe/d of plateau production relates to projects already on stream with the remainder expected over the balance of the year. It is somewhat inevitable however that some of these may slip into 2016 – we would highlight Laggan Tormore and Edvard Grieg as just two examples of delayed projects that have already seen target startup dates slip closer to year-end. We estimate that a further 126 new projects will be brought on stream over the remainder of the decade, amounting to some 26.0Mboe/d of plateau production. We note that this 2015-20 total of 29.4Mboe/d and 151 projects compares to the 2015-20 totals of 31.9Mboe/d and 160 projects respectively that we estimated in 2014, and 30.0Mboe/d (161 projects) in 2013.

Of particular note in comparison to the database published in our September 2014 Analyser is the large amount of slippage towards the end of the decade, a product of the large numbers of projects yet to be sanctioned that are being pushed sideways in the current market environment (either due to concerns about economics or more to take advantage of expected cost deflation in the supply chain). The ~2.5Mboe/d of 2015-20 startups that have gone 'missing' since September 2014 exemplify this: in a normal market environment we would expect the number of projects in a given date range to creep upwards as time passes, as recent discoveries are appraised and upgraded to viable projects and previously unannounced projects are sanctioned and tie-backs/fast-track developments emerge with new near-field exploration success. We would also highlight the depressed FID environment currently: in a 'normal' year we would expect startups/FIDs of a little over 5Mboe/d. 2015 has seen 1.1Mboed sanctioned to date with 1.2Mboe/d pending, while we see 5.3Mboe/d of FID options in 2016 (realistically around 50% of this likely slips into 2017 or beyond, however). That said, we have added some new projects to our database over 2014-15, including:

- A number of phases of development of Iran's super-giant South Pars gasfield. The weeks since July's nuclear agreement was announced have seen a wave of press releases relating to these projects announcing many of them to be >70% complete. Information had previously been scarce in light of sanctions and no IOC involvement.
- Three LNG projects: the Coral FLNG project in Mozambique (we had previously been treating the onshore and offshore as simply separate phases, but this is now a clearly identifiable stand-alone development); Petronas' Pacific NorthWest LNG, which now looks closer being commercially viable than we had previously thought; and Total's Elk/Antelope project in Papua New Guinea, where a standalone LNG development is now the preferred option.
- Several West African projects – including 3 Eni discoveries (Nene and Minsala Marine offshore Congo and the OCTP project offshore Ghana) that are being put through fast-track development solutions.

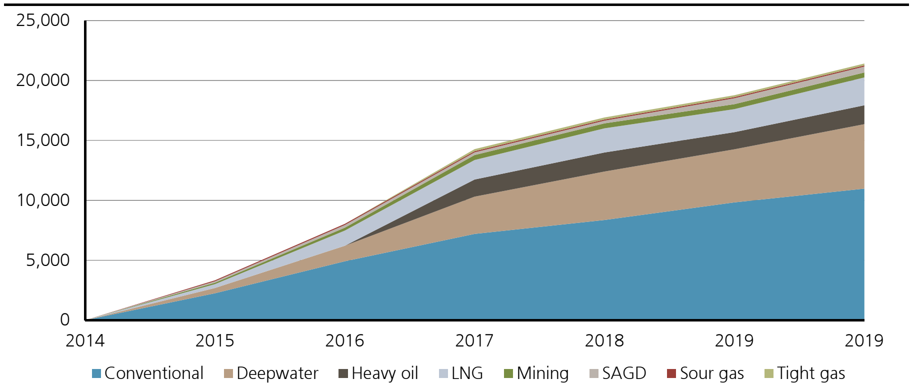
Upcoming FIDs / recent delays

2015 to date has been extremely quiet in terms of FIDs. Just 5 major projects in our database (representing 1.1Mboe/d peak production, including 0.8Mboe/d liquids) have been sanctioned this year: Eni's OCTP project; Statoil's Johan Sverdrup field; BP's West Nile Delta project; Shell's Appomattox/Vicksburg development; and Maersk's Culzean HP/HT gas field (although we acknowledge that there have been some smaller projects not meeting the ~100 kboe/d threshold for inclusion in our database sanctioned this year, including Statoil's Peregrino Phase 2 and Total's Edradour/Glenlivet fields). The remaining potential FIDs for 2015 amount to some 1.2Mboe/d production, 0.5Mboe/d liquids). These is significantly below the average start-up volumes/FID'ed volumes per year (across the cycle these two figures ought to be similar) of 5.2Mboe/d over 2007-14.

In the context of a depressed oil price and uncertain outlook, stretched balance sheets, an industry that was already under fire over cost discipline even at $110/bbl, and the allure of more supply chain deflation to come this is hardly surprising. Of the remaining 9 major FID options in 2015, several have already been significantly delayed (Mad Dog Phase 2, Vette) to seek cost reductions while others are at risk of slipping into 2016 (Buckskin/Moccasin, Tengiz Future Growth). In the absence of a material recovery in oil prices we would be unsurprised to see a similarly depressed year for FID's in 2016. While we have identified 29 major projects (5.3Mboe/d) that could be sanctioned in 2016, these are very much *options* at this stage – many have already been delayed from 2015 targets and if oil prices remain as they are we expect a number to slip further sideways.

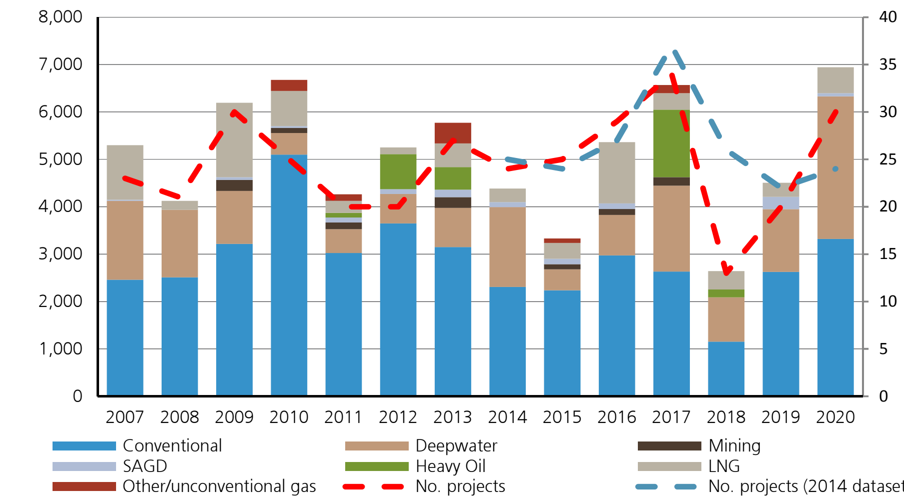
We would also highlight that a number of projects have gone quietly missing from the majors' portfolios over the last 12 months. Over the course of 4Q14 strategy update season we identified 15 major developments, totalling ~2Mboe/d plateau production and previously expected to start up by end-2020 that disappeared from project lists. Deepwater West Africa is the main sufferer (primarily Angola and Nigeria at ~0.9Mboe/d) along with more marginal LNG developments, Since then we have also seen Petrobras cut 1.4Mboe/d worth of projects 2015-19 curve, and a several projects in Iraq have seen budgets slashed – implying material reductions in incremental supply.

Figure 158: 2015-20 start-ups by type (kboe/d cumulative at plateau, gross)



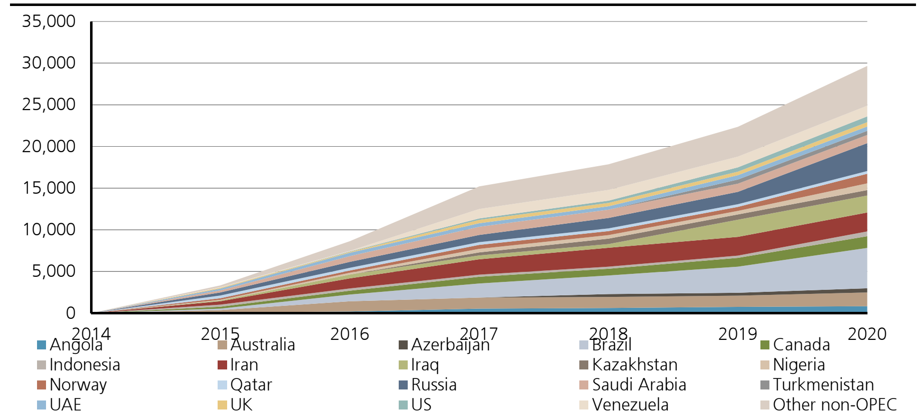
Source: UBS, Company Data, Wood Mackenzie.

Figure 159: Upstream major projects: kboe/d plateau production by startup year (LHS) and no. of identifiable projects (RHS)



Source: UBS, Company Data, Wood Mackenzie

Figure 160: 2015-20 start-ups by country (kboe/d cumulative at plateau, gross)



Source: UBS, Company Data, Wood Mackenzie

Figure 161: 2015-16 major project FID s and FID options

Country	Project Name	Discovery	FID	Start-up date	Plateau Year	Total prod (kboe/d)	Reserves (Mboe)	Operator	Project Type	Comments on FID
2015 FIDs and remaining 2015 FID options						2,279	11,198	14 projects		
Ghana	Offshore Cape Three Points	2009	2015	2017	2018	85	233	Eni	Deepwater	FID'ed January 2015
Norway	Johan Sverdrup	2011	2015	2020	2023	610	2,353	Statoil	Conventional	PDO submitted February 2015
Egypt	West Nile Delta Gas	2007	2015	2017	2019	207	917	BP	Conventional	Development plan submitted March 2015
US	Appomattox	2010	2015	2019	2020	175	650	Shell	Deepwater	FID'ed July 2015
UK	Culzean	2008	2015	2019	2021	75	250	Culzean	Conventional	FID'ed August 2015
Kazakhstan	Tengiz Future Growth Project	1979	2015	2018	2019	275	1,000	Chevron	Conventional	FID targeted for 4Q15
US	Mad Dog Phase 2	1998	2015	2017	2018	107	400	BP	Deepwater	BP had delayed the project to seek cost reductions - still targeting an FID by end-2015 or early 2016.
Venezuela	Perla Phase 2	2009	2015	2017	2019	84	760	Repsol-Eni	Conventional	Phase 1 sanctioned in December 2011 with a gas sales agreement running until 2036 and on stream in July 2015. No announcement on Phase II sanction yet but we would expect this in 2015-16.
Angola	Cameia (Block 21)	2012	2015	2018	2020	75	499	Sonangol	Deepwater	Cobalt had previously targeted an end-2015 FID for Cameia - and target reiterated on Sonangol deal announcement
US	Buckskin & Moccasin	2009	2015	2018	2019	35	389	Chevron	Deepwater	Chevron expects to develop the project as a tie-back to the Jack/St Malo infrastructure, although is still evaluating development options. FID could slip into 2016 or beyond.
Mozambique	Coral FLNG	-	2015	2019	2020	69	796	Eni	LNG	FEED underway as of October 2014, expected to complete early 2Q15. LNG offtake agreements currently under negotiation and FID is targeted for end-2015 according to Galp.
Norway	Vette Area	1972	2015	2016	2106	50	50	Premier Oil	Conventional	PDO submission delayed until end-2015 to take advantage of cost deflation.
Cyprus	Aphrodite	2011	2015	2020	2021	138	757	Noble Energy	Deepwater	Declared commercial in June 2015, with the base case development plan an 800Mcf/d FPSO with some gas piped to Cyprus and some to Egypt. Final development plan expected to be submitted in 2H15.
Canada	Pacific NorthWest LNG	-	2015	2020	2021	294	2,145	Petronas	LNG	Reached 'conditional FID' in 2Q15 pending regulatory approval. The most advanced of the West Coast Canadian LNG projects.
2016 FID options						5,317	41,668	29 projects		
US	Vito	2009	2016	2019	2020	100	297	Shell	Deepwater	Mid-2016 FID targeted, pushed back from late 2015.
Angola	Chissonga (Block 16)	1994	2016	2019	2020	145	588	Maersk Oil & Gas	Deepwater	Project being redesigned to reduce costs – a possible 2016 FID if oil prices recover although project economics are poor and complexity high.
Canada	Surmont Phase 3	nm	2016	2019	2020	135	419	ConocoPhillips	SAGD	Unlikely in current price environment
Russia	Tagulskoye	1977	2016	2019	2022	70	772	Rosneft	Conventional	

Mozambique	Mamba LNG T1/2	2011	2016	2019	2025	224	9,019	Eni/Anadarko	LNG	
Congo	Minsala Marine	2013	2016	2019	2020	100	376	Eni	Conventional	Likely a fast-track development in line with Eni's other shallow-water Congo discoveries
UK	Rosebank-Locknagar	2004	2016	2020	2022	114	281	Chevron	Deepwater	Slipped from a previous 2015 target FID. Chevron has not provided an updated timeline.
Russia	Khvalynskoye	2000	2016	2020	2021	145	1,668	Caspian O&G	Conventional	
Australia	Browse LNG	1971	2016	2021	2026	310	2,984	Woodside	LNG	Officially in FEED, conditional EPC contracts for 3 vessels have been awarded (pending FID targeted for 2016)
Brazil	Itaipu	2004	2016	2020	2021	120	245	BP	Deepwater	
US	Hadrian North	2010	2016	2020	2020	100	299	ExxonMobil	Deepwater	
Papua New Guinea	PNG LNG Train 3	-	2016	2020	2021	170	981	ExxonMobil	LNG	Obvious expansion candidate but may be held up by the loose LNG market environment
Israel	Leviathan Phase 1	2010	2016	2020	2021	276	2,167	Noble Energy	Deepwater	2016 FID option but pending a final agreement with Israel – has received cabinet approval but Knesset vote delayed until new antitrust commissioner appointed. New Eni Egypt discovery threatens development plan.
Russia	Urengoiskoye Achimov IV/V	1966	2016	2020	2021	303	2,308	Gazprom	Conventional	
Kenya	Lokichar Basin	2008	2016	2020	2022	175	941	Tullow	Conventional	Late 2016/early 2017 FID targeted and pipeline route has now been selected
Russia	Chonskaya Fields	-	2016	2020	2025	191	1,126	Gazpromneft	Conventional	
Uganda	Albert Basin	2007	2016	2020	2022	200	1,700	Tullow	Conventional	Late 2016/early 2017 FID targeted and pipeline route has now been selected
Indonesia	Gendalo-Gehem	1999	2016	2020	2021	230	402	Chevron	Conventional	
Indonesia	Tangguh (3rd train)	1996	2016	2020	2021	83	1,085	BP	LNG	
Nigeria	Bonga Southwest	2001	2016	2020	2019	225	733	Shell	Deepwater	Early 2016 FID targeted, delayed from 2015.
US	Shenandoah	2009	2016	2020	2019	57	399	Anadarko	Deepwater	
Brazil	BM-C-33	2010	2016	2020	2021	218	1,081	Repsol-Sinopec	Deepwater	A disposal option for both Repsol (post-Talisman) and Petrobras (as part of new disposal plan) which could delay FID.
Canada	Sunrise Phase 2	nm	2016	2020	2022	70	1,333	Husky Energy	SAGD	
Russia	Kharasaveyskoye	1974	2016	2020	2022	574	6,451	Gazprom	Conventional	
Canada	Kearl Phase 3	-	2016	2021	2022	125	750	Imperial Oil	Mining	2020 target for startup removed in June 2015, new timeline unclear.
Canada	LNG Canada	-	2016	2021	2024	297	-	Shell/Mitsubishi/CNPC/KOGAS	LNG	Likely to slip given pending BG deal and current LNG market environment.
Australia	Arrow LNG (Shell Australia LNG)	-	2016	2021	2022	184	1,402	Shell	LNG	While greenfield LNG option has been scrapped some decision on use of upstream resource (most likely an expansion train at another Queensland LNG project) will be taken after the BG deal closes
US	Kaskida	2006	2016	2022	2021	100	328	BP	Deepwater	
Canada	Kitimat LNG	-	2016	2023	2021	276	1,533	Chevron	LNG	

Source: Source: UBS, WoodMackenzie, IEA, Upstream, Company Data, Reuters, Bloomberg

Figure 162: Upstream project startups 2015-20

Country	Project Name	Disc'vry	FID	Start-up date	Plateau Year	Peak prod (kboe/d)	Reserves (Mboe)	Operator	Project Type	Comments
2015 projects						3,330	22,156	25 projects		
Congo	Nene Marine	2013	2014	2015	2017	120	412	Eni	Conventional	Nene Marine: Brought onstream in January 2015, 16 months after initial discovery and 8 months after obtaining the production permit. The field will be developed in phases, and Eni has two other discoveries on the block - Litchendjili and Minsala Marine (~2bn boe between them) that it is hoping to develop using similar fast track plans.
UAE	Shah Gas Project	-	-	2015	2016	93	-	ADNOC	Conventional	Shah: Sour gas project. In April 2010 ConocoPhillips withdrew from the project and was replaced by Occidental in January 2011. The project processes ~1 Bcf/d sour gas, producing ~0.5 Bcf/d usable gas. Started up in January 2015.
Russia	Sakhalin-1 Arkutun-Dagi	-	2004	2015	2015	90	556	ExxonMobil	Conventional	Arkutun-Dagi: Third field to be developed as part of the Sakhalin-1 project. Came on stream in January 2015, adding 90kb/d peak capacity to the project and bringing total production to 200kboe/d.
Iraq	Tawke expansion	2006	-	2015	2019	100	300	DNO	Conventional	Tawke: Production started in 2007, however operator DNO's plan is to expand production from the 2014 level of ~100kboe/d to 200kboe/d by early 2015.
UAE	SAS (Sahil, Asab and Shah) Phase 2	1965	2009	2015	2016	115	4,078	Adco	Conventional	SAS: FFD phase 2, expansion of Asab and Sahil fields. Part of the new ADCO concession, which Total, Inpex and GS Energy have all taken stakes in, and contributes to the 200kb/d growth from the concession by 2017.
Indonesia	Banyu Urip Full Phase	2001	2011	2015	2015	200	280	ExxonMobil	Conventional	Banyu Urip: Early phase started up in December 2008 with production of 0.8kboe/d, reaching 40kboe/d early production by 2014. Project is expected to hold 450 MMBbls of oil resource and full scale production of 200kboe/d expected to be reached by the end of 2015. Started up in May 2015.
Canada	Kearl Phase 2	-	2010	2015	2016	110	750	Imperial Oil	Mining	Kearl: In November 2010 reported that the plans to build in three phases had been altered. Later phases will include a stage that boosts operations to increase the final capacity of the project to 345,000 bpd by 2020. Production from Phase 1 began in April '13. Phase 2 started up in June 2015. Phase 3 (debottlenecking) has received regulatory approval and is due to start up in 2020.
Indonesia	Donggi Senoro LNG	-	2011	2015	2016	58	267	Pertamina/ Medco	LNG	Donggi Senoro LNG: Small 1-train 2Mpta LNG plant intended to commercialise the remote Sulawesi and Senoro-Toili JOA blocks. 250 MMcfd of gas will be sourced from the Senoro-Toilli block, jointly owned by Pertamina and Medco, and the remaining 85 MMcfd from Pertamina's Matindok (Donggi) block. Project financing closed in November 2014 and startup expected in mid-2015.
Australia	Australia Pacific LNG Train 1	-	2011	2015	2016	104	685	ConocoPhillips/ Origin JV	LNG	Australia Pacific LNG Train 1: Partners expect first LNG in 2H15 (previous target had been 2014) as of Origin's 2Q results in July 2015. FID was taken in July 2011. Development plan is for two 4.5Mtpa trains.
Venezuela	Perla Phase 1	2009	2011	2015	2015	78	760	Repsol/Eni	Conventional	Perla: Sanctioned in December 2011 with a gas sales agreement running until 2036. Estimated gas in place is c.17Tcf. Phase 1 cost is estimated at $1.4bn. Condensate sales agreement signed in June 2014 and production started up in July 2015.

Brazil	Iracema North	2010	2010	2015	2016	180	825	Petrobras	Deepwater	Iracema North: Formerly Cernambi. FPSO Cidade de Itaguai (150kbpd capacity) started production in August 2015
Iran	South Pars Phases 15 and 16	1971	-	2015	2017	405	733	National Iranian Oil Company	Conventional	South Pars 15 & 16: The development of Phases 15 and 16 is similar in design and scale to previous phases. Original plan was for gas to start in 2010- a Phase 15 platform came on stream in January 2015, producing 450 Mcf/d. Peak production from the two phases is expected to be 50 Mcm/d and 77kb/d condensate. Reached nameplate capacity in August 2015.
Qatar	Barzan Phase 1	nm	-	2015	2016	321	2,720	ExxonMobil	Conventional	Barzan Phase 1: XOM lists as 2015+ project. The most recent press reports suggest a 2H15 startup. Will serve as feedstock for Rasgas.
Nigeria	Ofon II (OML 102)	-	2010	2015	2016	70	148	TOTAL	Conventional	Ofon II: Delayed after Nigerian government ordered work to stop in March 2014 due to cost overruns. Work resumed in 2H14, and started up in January 2015
Australia	Queensland Curtis LNG T2	nm	2010	2015	2016	88	890	BG	LNG	QC LNG: Train 2 loaded first LNG in July 2015 following commercial handover of T1 in May. Plateau expected mid-2016 although we view this as conservative.
Norway	Goliat	2000	2009	2015	2016	92	175	Eni	Conventional	Goliat: Feb 2010 - Hyundai Heavy Industries of South Korea to build the Nkr6.9 billion ($1.1 billion) FPSO. Delayed to mid 2015 from 4Q14 with costs increased by Nkr2.5bn ($430m). As of October 2014 will cost Nkr46.7bn ($7.21bn) per Norwegian energy ministry.
Saudi Arabia	Shaybah condensate plant	1968	-	2015	2015	250	4,149	Aramco	Conventional	Shaybah condensate: Condensate and LPG. Expected to start up in mid-2015 but no newsflow on this to date.
China	Chuandongbei Stage 1 China	-	2009	2015	2019	93	910	Chevron	Sour gas	Chuandongbei: Construction underway for two sour gas processing facilities connected to five fields to be developed over three stages. First train reached mechanical completion in December 2014. Start-up is expected in 2H15; total nameplate capacity of 558Mcf/d.
Russia	Yarudeiskoye	-	2012	2015	2017	85	357	Novatek	Deepwater	Yarudeiskoye: construction of pipeline and drilling of ~70 wells nearly complete, field expected to start production in 4Q15.
UK	Laggan-Tormore	1986	2010	2015	2016	90	230	TOTAL	Deepwater	Laggan-Tormore: $3.83Bn Shetland Islands project. Total increased stake in March 2010 and sanctioned the project. Laggan-Tormore is estimated to hold 230Mboe. Startup has slipped to 2H15 from initial plans for a 2014 startup.
Canada	Surmont Phase 2	nm	2010	2015	2016	118	419	ConocoPhillips	SAGD	Surmont Phase 2: FID for phase 2 taken in January 2010. First steam announced 29 May 2015, commercial production expected 2H15.
Russia	Vladimir Filanovsky	2005	2011	2015	2016	202	1,207	Lukoil	Conventional	Vladimir: The largest of Lukoil's Caspian deposits. Due to come online at end 2015. Part of Severnyi block.
Angola	Kizomba Satellites Phase 2 (Block 15)	2003	2012	2015	2018	85	473	ExxonMobil	Deepwater	Kizomba Satellites Phase 2: FID reached in 2012. Plans to develop 190 Mboe resources via tie-backs to the Mondo and Kizomba B FPSOs. Came on stream in April 2015.
Australia	Gladstone LNG Train 1	nm	2011	2015	2017	83	648	Santos	LNG	Gladstone: FID was originally expected in 2009, and was taken in January 2011. Santos expects the two-train plant to cost $18.5bn. Start-up expected in late 3Q 2015, 2 trains with overall capacity of 7.8mtpa.

Norway	Edvard Grieg	2007	-	2015	2016	100	184	Lundin	Conventional	Edvard Grieg: Will be developed through a stand alone platform. Luno 2 discovery could be tied in to infrastructure as well. Startup has slipped from '4Q15' to 'Late December 2015' on the late arrival of lift vessel delaying topside installation (this has now been completed).
2016 projects						5,313	51,801	28 projects		
Canada	Horizon Phase 2B/3	nm	2010	2016	2017	125	3,300	CNRL	Mining	Horizon: Delays to Horizon 1 caused cost pressures on the project. Horizon said it would develop Horizon in small projects to limit inflation. Phases 2B and 3 remain: construction 60% complete as of June 2015.
Angola	Mafumeira Sul	-	2013	2016	2017	120	450	Chevron	Conventional	Mafumeira Sul: Located in Block 0. Amec awarded FEED contract in May 2010. CVX expects start up in 2016.
Canada	Foster Creek G	-	2012	2016	2016	30	900	Cenovus Energy	SAGD	Foster Creek: one of CVE's two producing oil sands projects, with commercial production dating back to 2002. There are six phases (A-F) currently producing, with Phase F recently coming onstream, bringing productive capacity to 150 kb/d. The most recent expansion at Foster Creek contemplated three phases (F,G, and H) being developed in concert and could add an incremental 90 kb/d. Further debottlenecking could add an additional 7.5 - 17.5 kb/d.
Canada	Chrisina Lake F	-	-	2016	2106	50	1,500	Cenovus Energy	SAGD	Christina Lake has five phases (A-E) producing today with current production capacity of 75 kb/d. The next leg of growth will come through a debottlenecking initiative, which is expected to add 11 mbpd of productive capacity by late 2015. Construction is underway on the next tranche of development which utilises the company's manufacturing approach and contemplates three phases (F,G,H) adding up to 150 kb/d.
Australia	Gorgon T1-3 (Io, Jansz)	1973	2009	2016	2017	450	5,054	Chevron	LNG	Gorgon: First LNG from train 1 now likely to slip into 2016 from 3Q15 target on labour disputes, bad weather and equipment malfuntions, and the budget went up >45% from initial budget to $54bn in December 2013. Train 1 is nearing completion, with start-up now expected late this year and >75% LNG production committed under SPAs.
Brazil	Atlanta and Oliva (BS-4)	1993	2006	2016	2021	75	322	QGEP	Deepwater	BS-4: Shell sold its 40% stake to Barra Energia (10%) and QGEP (30%) in 2011. Barra Energia also acquired Chevron's 20% stake in 2011. An EPS will take place in 2013-14, while the final production system is still being defined (30kboed initial, then shift to 75kboed for FFD). First Atlanta oil expected mid 2016, first Oliva oil expected 2021. FPSO chartered from Teekay in December 2014
Australia	Australia Pacific LNG Train 2	nm	2012	2016	2017	104	685	ConocoPhillips/Origin JV	LNG	Australia Pacific LNG train 2: Size of train expanded to 4.5mtpa in April 2010. Proven reserves are 2Tcf, 2P reserves are 8tcf and 3P reserves are nearly 13 Tcf. Train 2 expected 6 months after the first train. FID was taken in July 2012.
Nigeria	Gbaran Ubie Phase 2	-	2013	2016	2017	150	500	Shell	Conventional	Gbaran Ubie Phase 2: FID June 2013. Plans to develop 1.3Tcf of non-associated gas though adding nine new wells to three fields. Shell lists as a 2015-16 startup.
Canada	MacKay River Phase 1	-	2012	2016	2024	35	425	Petrochina	SAGD	MacKay: Sinopec bought Athabasca Oil Corp's remaining 40% stake in 2013. Bitumen will be recovered in-situ usign SAGD. Phase 1 under construction and excpeted to startup in 2015, remaning phases have received regulatory approval but no sanction yet.
Australia	Gladstone LNG Train 2	nm	2011	2016	2017	83	648	Santos	LNG	Gladstone: FID on Train Two taken at the same time as Train 1 in January 2011.
Iran	South Pars	1971	-	2016	2019	405	-	National Iranian	Conventional	South Pars 17&18: Project 89% complete as of August 2015 with some early production volumes having been

	Phases 17 and 18							Oil Company		recovered by the Phase 18 platform. Expected onstream by March 2016.
Iran	South Pars Phase 19	1971	-	2016	2019	405	2,960	National Iranian Oil Company	Conventional	South Pars 19: First South Pars phase being carried out as a 35-month project, significantly shorter timeline than previous phases. Initial production of 1Bcf/d from platform 19C expected to start in March 2016 (platform is 87% complete at August 2015) with two more platforms to follow.
Russia	Suzunskoye	1971	2013	2016	2019	60	400	Rosneft	Conventional	Suzunskoye: part of the Vankor cluster which includes the Tagulskoye, Lodochnoye and Russkoye fields. The field is a relatively simple structure containing good quality oil, most of which lies within a single reservoir horizon. Rosneft plans to launch the field by end-2016.
Congo-Brazzaville	Moho Nord	2007	2013	2016	2017	140	365	TOTAL	Deepwater	Moho Nord: Discovered April 2007. Project entered FEED in 2011 and FID was taken in 2013.
Saudi Arabia	Arabiyah & Hasba	2009	-	2016	2017	431	2,759	Saudi Aramco	Conventional	Arabiyah & Hasbah: Saudi Aramco announced discovery in June 2009. Company says it is of a similar size and nature to Karan, and will likely take 4 years to develop. Saipem was selected for the production facilities, South Korean firms are in charge of the onshore facilities at Wasit. Difficulties in construction of the 3Bcf/d processing plant (Wasit) mean that only early production volumes will come in 2015, with full operations delayed until mid-2016.
UAE	Upper Zakum redevelopment	1954	2006	2016	2017	200	20,000	ExxonMobil	Conventional	Upper Zakum 750: Project is to increase production from 500kbpd to 750kbd by 2017, with a longer term target of 1Mb/d by 2024.
Brazil	Carioca I	2007	2013	2016	2017	185	459	Petrobras	Deepwater	Carioca I: Renamed as Lapa. Petrobras expects start-up in 2016 (2014-18e BP). Total volumes are estimates at 460m boe.
Iraq	Missan	1969	2010	2016	2022	350	867	CNOOC	Conventional	Missan: CNOOC and Sinochem unsuccessfully bid for Missan in Iraq's first upstream licensing round in June 2009. They initially bid to accept $21.40/bbl, then $18.09/bbl – both way above the ministry's maximum remuneration fee of $2.30/bbl. In May 2010 it was announced that CNOOC and TPAO would develop the field for $2.30/bbl, intending to raise production to 450kbpd within six years.
US	Alaska Point Thomson	1977	2012	2016	2026	70	1,379	ExxonMobil	Conventional	Point Thomson: ExxonMobil expects start-up in 2015+ (BP lists as a 2016 start), with natgas stripped of liquids and re-injected for future extraction, but significant volumes will not be achieved until an Alaska gas pipeline or LNG project is constructed. The project was FID'ed in 2012 as diclosed by BP. Estimated reserves in place of 8 Tcf.
Brazil	Lula Alpha	2006	2010	2016	2017	185	816	Petrobras	Deepwater	Lula Alpha: Formelly Lula Alto. Initially was expected to get one of the replicants, but later SBMO was contracted to provide FPSOs for two Lulas starting up that year - Alpha and Beta. Cidade de Marica - 150kbpd.
Brazil	Lula Beta	2006	2010	2016	2017	185	816	Petrobras	Deepwater	Lula Beta: Formerly Lula Central. Was initially to receive a replicant, however later Petrobras contracted SBMO to ptovide FPSO. Cidade de Saquarema - 150kbpd
Russia	Messoyakha	1982	2012	2016	2025	283	1,202	Messoyakhaneftegaz	Conventional	Messoyakha: West Siberian field with estimated reserves of 1.2Mb oil + 3Tcf gas. Startup expected by end-2016.
Ghana	Tweneboa, Enyenra, Ntomme	2009	2013	2016	2018	83	354	Tullow	Deepwater	TEN: sanctioned in 2013, Modec to provide FPSO. Tullow expect a 2H16 startup: however the field is located in a disputed region of the maritime boundary between Ghana and Cote d'Ivoire. In February 2015 the government of Cote d'Ivoire applied for provisional measures to suspend operations on TEN until the International Tribunal of the

										Law of the Sea provides its full verdict in (expected end-2017). The ITLOS ordered a drilling suspension in April 2015 but the impact of this is relatively benign: all 10 development wells have already been drilled and completion processes (unaffected by ruling) are underway.
Uzbekistan	Kandim	1966	2014	2016	2019	121	559	Lukoil	Conventional	Kandim: PSC signed in 2004, committing Lukoil to a two phase development. Phase 1 (onstream in 2007) involved development of Khauzak-Shadi while Phase 2 involved the development of Kandim - originally due to start-up in 2011. Kandim startup has since been delayed by 5 years due to length of time required to gain regulatory approval for the FEED study (completed December 2013)
Norway	Ivar Aasen	2008	2013	2016	2019	78	206	Det Norske	Conventional	Ivar Aasen: PDO approved March 2013, unitisation agreement agreed in June 2014. Fields being developed in conjunction with Edvard Grieg, 10km to the south. Startup scheduled for 4Q16.
Australia	Wheatstone	2004	2011	2016	2018	307	2,122	Chevron	LNG	Wheatstone: The project is to begin with two trains (of 8.9 mtpa combined) but Chevron has secured federal approval to produce up to 25 mtpa by adding more trains. Chevron gives start-up date as late 2016. 85% LNG committed under SPAs. Project currently 65% complete and within US$29bn budget but schedule under pressure due to delays in module delivery from one fabrication yard.
Australia	Ichthys Train 1 & 2	2000	2012	2016	2019	351	2,753	INPEX	LNG	Ichthys: Cost estimated at $34bn. FID taken in Jan 2012. Deliveries are planned to start in 2016. TOTAL increased its stake to 30% in July 2012. Around 1 quarter behind schedule as of August 2015 but still on track for first deliveries by end-2016 (per Inpex).
Saudi Arabia	Shaybah Oil Expansion	1968	2014	2016	2017	250	-	Aramco	Conventional	Shaybah oil expansion: Oil production expansion: placing wells at deeper locations away from gas cap. Arabian Extra Light Crude
2017 projects						6,571	35,776	34 projects		
Kazakhstan	Kashagan Phase 1	2000	2004	2017	2018	370	2,045	Eni	Conventional	Started up in 2013 (briefly) before leaking pipelines forced the shut-in of production. Pipelines are currently being relayed, with the restart of production currently scheduled for 2H16/early 2017- we take 2017 as the more cautious start-up date for a project that has been plagued by delays and cost overruns.
Russia	Yurubcheno-Tokhomskoye	1985	2014	2017	2020	152	900	Vostsibneftegaz	Conventional	Yurubcheno-Tokhomskoye: Currently producing very small amounts. To be developed in a phased manner, largely because of its complex geology. This has historically given rise to wide variations in reserves estimates. The field continues to produce at low levels for infield and local use. We estimate project profitabilty should improve due to oil industry taxation reform in Russia, however the IRR will still be below Rosneft's threshold level of profitability.
Trinidad	Juniper	1972	2014	2017	2017	102	534	BP	Conventional	Juniper: BP announced sanction in 13 August 2014. Fabrication began in 4Q14, and drilling will commence in 2015. First gas expected 2017, although early 2017 target likely to be missed on delays at the Tofco yard. Juniper gas will flow to the Mahogany B hub via a new 10km flowline.
Angola	Block 32 Kaombo - CSE	2002	2014	2017	2018	230	686	TOTAL	Deepwater	Block 32 Kaombo - CSE: FID'ed in 2014, expected to come on stream in 2017. Capacity raised to 230kboed from 200kboed, cost cut to $16bn from $20bn at sanction.
UK	Clair Ridge/Clair Phase 2	-	2010	2017	2018	100	553	BP	Conventional	Clair Ridge: Ugrade to existing facilities. ConocoPhillips announced its intention to sell its stake in September 2014. Construction of the facilities is taking longer than expected due to an order backlog at the yard in South Korea delaying the second platform - startup delayed to 2017. Next key milestone is installation of production and drilling topsides - scheduled for summer 2016.

Venezuela	Carabobo 2	-	2014	2017	2022	480	3,445	PDVSA	Heavy Oil	Carabobo 2: Located in the Orinoco heavy oil belt. JV was officially formed in May 2013 with Rosneft (40%)-Petrovictoria. No recent newsflow, as with many of the Venezuelan Orinoco projects in 2015, but it is believed that development is yet to start.
Venezuela	Perla Phase 2	2009	2015	2017	2019	84	760	Repsol-Eni	Conventional	Perla: Phase 1 sanctioned in December 2011 with a gas sales agreement running until 2036. Expected Phase II peak production is 800Mcf/d, an additional 350Mcf/d over Phase 1 Plateau.
Angola	Block 15/06 East Hub	2009	2013	2017	2018	100	210	Eni	Deepwater	Block 15/06 East Hub: Includes the Cabaca Norte, Cabaca SE and Mpungi fields. Start up is expected in 2017.
Norway	Gina Krog	2007	2013	2017	2017	119	265	Statoil	Deepwater	Gina Krog: Formerly Dagny and Ermin. Statoil plans a 2017 start-up with overall production at 120kboe/d.
UK	Schiehallion Area redev.	-	2011	2017	2017	125	400	BP	Conventional	Schiehallion Area redev: Approved by Shell in 2Q11. Operator BP listed as a 2016 startup at December 2014 upstream day, though Shell and OMV both more recently listed as a 2017 startup at 4Q14.
Brazil	Lula Sul	1982	2010	2017	2018	185	816	Petrobras	Deepwater	Lula Sul: FPSO Lul Sul, 150kbpd capacity. Assigned replicant FPSO p-66, one year delay from previous target of 2016.
US	Mad Dog Phase 2	1998	2015	2017	2018	107	400	BP	Deepwater	Mad Dog 2: BP had delayed the project to seek cost reductions - still targeting an FID by end-2015 or early 2016.
Saudi Arabia	Khurais Expansion 2	1958	2013	2017	2018	300	-	Saudi Aramco	Conventional	Khurais expansion 2: Saudi Aramco announced in October 2013 that it would aim to increase Khurais output by 300kb/d to 1.5Mb/d by 2017. EPC contracts were awarded to a Saipem/CCC JV in October 2014.
Ecuador	Block 43 (ITT)	1970	2014	2017	2019	160	1,000	Petroamazonas	Heavy Oil	Block 43 (Ishpingo, Tiptuini, Tambococha): Heavy oil fields situated in the Yasuni National Park, close to the Peruvian border. 5.5bn bbls oil in place, ~1bn recoverable. In 2014 the Ecuadorian government gave up on previous plans to seek compensation from the international community in exchange for not developing the area, and issued permits for drilling to Petroamazonas in May 2014.
UK	Catcher	2010	2014	2017	2019	48	88	Premier Oil	Conventional	Catcher Area: Discovered in June 2010, sanctioned June 2014 and developed via a new-build FPSO leaded from BW Offshore. MOL acquired 20% from Wintershall in December 2013.
Malaysia	SK 316	-	2012	2017	2018	246	937	Petronas	Conventional	SK 316: PSC contains a number of gas fields offshore Sarawak being developed to underpin the MLNG T9 project.
Nigeria	Egina	2003	2013	2017	2018	200	570	TOTAL	Deepwater	Egina: Expected 2015. The development plan has been approved by the Nigerian authorities. FID'ed in summer 2013.
Iran	South Pars Phase 20-21	1971	2010	2017	2019	405	2,960	National Iranian Oil Company	Conventional	South Pars 20-21: Pipelay began in July 2015, platforms due to be completed in September 2015 and will be installed once pipelay complete.
Venezuela	Carabobo 3	-	2013	2017	2021	480	3,445	PDVSA	Heavy Oil	Carabobo: A second consortium, led by Chevron, offered a signature bonus of $500m for the three blocks making up the Carabobo 3 project (Carabobo 2 South, Carabobo 3 and Carabobo 5), plus a financing commitment of $500m. Absent from recent Chevron CMD presentations - JV partners 'currently working towards commercialisation' and IEA's most recent startup estimate of 2016 looks optimistic.
Mexico	Ayatsil	2006	2010	2017	2018	250	553	Pemex	Heavy Oil	Ayatsil: Discovered in 2006. Very heavy oil, with API of 11. Pemex booked 90.4 million barrels of proven reserves at Ayatsil in 2008 and at the time estimated that Ayatsil's possible reserves could be as high as 406.7 million barrels.

Egypt	West Nile Delta Gas	2007	2015	2017	2019	207	917	BP	Conventional	West Nile Delta Gas: Final development agreements signed in March 2015, development consists of the Taurus, Libra, Biza, Fayoum and Raven fields, containing 5 Tcf gas resources and 55 Mbbls of condensates, with exploration upside capable of adding another 5-7 Tcf. Production expected to reach 1.2Bcf/d.
Brazil	Buzios I (Norte)	2010	2014	2017	2018	180	612	Petrobras	Deepwater	Franco N: Renamed as Buzios. Petrobras bought the rights (ToR) in September 2010 and expects to start production in 3Q16. Buzios 1 (P-74) will have a 150kbpd capacity. Also part of the new Transfer of Rights under Production Sharing Agreement (ToR-PSA) deal signed between PBR and Bz Fed Govt. in Jun 14 for up to 6.5-10bn boe.
Norway	Aasta Hansteen	1997	2013	2017	2018	100	330	Statoil	Deepwater	Aasta Hansteen: Formerly Luva and being developed with the first SPAR on the NCS. Statoil took over as operator in 2006 and is aiming for first gas by 2017: drilling is due to start in 2016. Statoil has made 3 small discoveries in the area in 2015, Shnefrid Nord, Roald Rygg and Gyrmir, estimated at 75-120 Mboe, which are being evaluated as future tie-backs to the spar.
Canada	Hebron	1981	2013	2017	2020	150	925	ExxonMobil	Conventional	Hebron: Operator previously was Chevron, changed hands August 2008. Hebron was previously due onstream in mid-2016, but Exxon subsequently estimated first production will be at the end of 2017. Construction began in 2013. Exxon estimates peak production at 150kbpd.
Australia	Prelude LNG	2007	2011	2017	2018	120	494	Shell	LNG	Prelude: Shell will develop the Prelude and Concerto gas discoveries as FLNG. The FID was taken on May 20th 2011. Prelude will produce condensate, LPG and LNG. Shell lists as a 2017-19 startup.
Iran	South Pars 13 & 14	1971	-	2017	2019	230	2,960	National Iranian Oil Company	LNG	South Pars 13 & 14: An LNG development had previously been planned but fell through on sanctions. Phase 13 platforms 70% complete as of August 2015.
Brazil	Lula Ext. South	2006	2010	2017	2019	180	816	Petrobras	Deepwater	Lula South: Replicant P-68 is expected to start-up in 2017 with 150kb/d capacity. FPSO to be shared between Lula Ext South and the South of Tupi ToR area (unitisation required).
Oman	Oman FFD (Khazzan-Makarem)	nm	2013	2017	2018	172	1,573	BP	Tight gas	Khazzan-Makerem: First gas expected in late 2017, project involves ~300 wells over 15 years to deliver plateau of 1Bcf/d. BP farmed out 40% to Oman's NOC in 2014. Project is 'On track, on budget and on schedule' per BP Oman COO in April 2015.
UK	Kraken	1985	2013	2017	2019	53	137	EnQuest	Heavy Oil	Kraken Area: Heavy oil field discovered by Occidental in 1985 but not developed due to low flow rates deemed uncommercial. Five appraisal wells drilled in 2007 and FID taken in November 2013.
Brazil	Buzios III (S)	2010	2013	2017	2018	180	612	Petrobras	Deepwater	Franco S: Buzios III. P-77 is planned for 4Q2017 by Petrobras.
Brazil	Tartaruga Verde & Mestica	2009	2014	2017	2019	150	265	Petrobras	Deepwater	Aruana & Oliva: Petrobras expects 150kbpd FPSO in late 2017, no delay in latest strategy plan. Discovered 2009 in Campos Basin.
Ghana	Offshore Cape Three Points	2009	2015	2017	2018	85	233	Eni	Deepwater	OCTP: Sanctioned January 2015 with startup expected in 2H15. Yinson awarded FPSO charter.
Canada	Fort Hills Ph 1	2007	2013	2017	2022	180	1,655	Suncor	Mining	Fort Hills: Was put on hold by PetroCanada after costs increased to C$25bn. Suncor became operator after takeover of PetroCanada and is currently evaluating project. TOTAL purchased UTS' stake in July 2010. Voyager upgrader scrapped. Start up targeted for late 2017.
Russia	Chayandinskoye	2013	2012	2017	2029	340	3,681	Gazprom	Conventional	Chayandinskoye: FID taken in October 2012 - oil rim to be developed initially, with the gas development

				dependent on completion of the Power of Siberia pipeline, with first gas targeted for end-2018.
2018 projects	2,644	16,984	13 projects	
2019 projects	4,503	42,584	20 projects	
2020 projects	7,304	47,122	32 projects	

Source: UBS, WoodMackenzie, IEA, Upstream, Company Data, Reuters, Bloomberg

Financial comparisons

Note: All sources for figures are company reports and UBS estimates unless otherwise specifically noted

Company forecasts (Adj EPS)

		M.Cap				Local/Reporting						M.Cap					US$					
Company	Country	LC bn	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	$ bn	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
BG Group	UK ($)	32.9	1.20	1.37	1.33	1.28	1.18	0.38	0.57	1.17	1.43	1.69	49.9	1.20	1.37	1.33	1.28	1.18	0.38	0.57	1.17	1.43	1.69
BP	UK ($)	61.9	1.09	1.15	0.96	0.71	0.67	0.36	0.36	0.50	0.56	0.61	94.0	1.09	1.15	0.96	0.71	0.67	0.36	0.36	0.50	0.56	0.61
Cenovus	Canada (C$)	15.0	-	1.64	1.14	1.55	0.83	0.05	-0.18	0.58	0.85	0.98	11.3	-	1.61	1.15	1.45	0.72	0.04	-0.14	0.44	0.64	0.74
Chevron Corp.	US ($)	144.3	9.37	13.19	12.10	11.09	9.32	2.59	2.64	4.95	5.88	6.85	144.3	9.37	13.19	12.10	11.09	9.32	2.59	2.64	4.95	5.88	6.85
Eni	Italy (€)	52.0	1.90	1.94	1.95	1.22	1.02	0.34	0.50	1.12	1.38	1.63	58.0	2.50	2.70	2.51	1.62	1.35	0.38	0.57	1.28	1.58	1.85
ExxonMobil	US ($)	302.1	6.30	8.42	8.29	7.37	6.96	3.78	3.51	4.61	4.86	5.04	302.1	6.30	8.42	8.29	7.37	6.96	3.78	3.51	4.61	4.86	5.04
GALP	Portugal (€)	7.4	0.37	0.30	0.43	0.37	0.45	0.66	0.51	0.60	0.78	1.01	8.3	0.49	0.42	0.56	0.50	0.60	0.74	0.58	0.68	0.89	1.15
Gazprom	Russia ($)	49.6	2.68	3.73	3.22	3.01	0.63	1.42	2.01	2.39	2.60	2.59	49.6	2.68	3.73	3.22	3.01	0.63	1.42	2.01	2.39	2.60	2.59
Gazprom Neft	Russia ($)	11.0	3.34	5.67	6.00	5.91	3.79	3.43	4.58	7.18	8.14	7.71	11.0	3.34	5.67	6.00	5.91	3.79	3.43	4.58	7.18	8.14	7.71
Husky Energy	Canada (C$)	21.7	-	2.45	2.05	2.07	2.06	-0.01	0.34	0.92	0.91	1.14	16.3	-	2.40	2.07	1.94	1.77	-0.01	0.26	0.70	0.68	0.86
Imperial Oil	Canada (C$)	37.1	-	3.95	4.42	3.33	4.45	1.32	2.29	3.58	3.67	4.30	27.9	-	3.88	4.46	3.13	3.83	1.00	1.73	2.70	2.77	3.25
Lukoil	Russia ($)	27.4	10.94	13.04	14.17	10.18	6.20	4.09	5.91	10.02	10.22	11.20	27.4	10.94	13.04	14.17	10.18	6.20	4.09	5.91	10.02	10.22	11.20
MOL	Hungary (HUF)	1,358	2243	2115	1916	1294	1471	2191	1571	1867	2378	2446	4.8	10.78	10.51	8.51	5.79	6.32	7.93	5.71	6.79	8.65	8.90
Novatek	Russia ($)	28.2	4.40	13.01	7.37	11.33	4.17	7.71	10.11	12.29	16.26	20.04	28.2	4.40	13.01	7.37	11.33	4.17	7.71	10.11	12.29	16.26	20.04
OMV	Austria (€)	7.3	3.74	3.41	4.74	3.41	3.46	2.79	1.90	2.81	3.15	3.52	8.1	4.93	4.75	6.09	4.52	4.60	3.15	2.17	3.21	3.59	4.02
Petrobras (PN)	Brazil (BrR)	121.4	3.35	2.55	1.62	1.81	-1.65	0.36	0.82	2.22	3.11	3.60	31.6	1.90	1.53	0.83	0.83	-0.70	0.11	0.22	0.61	0.83	0.93
PetroChina	China (Rmb)	1846.2	0.76	0.73	0.63	0.71	0.59	0.26	0.26	0.49	0.64	0.76	238.2	0.11	0.11	0.10	0.12	0.10	0.04	0.04	0.07	0.09	0.11
PTT Public	Thailand (Bt)	742.6	26.23	36.42	32.78	34.17	27.99	24.58	26.90	30.37	28.19	27.58	20.7	0.83	1.19	1.06	1.11	0.86	0.72	0.75	0.85	0.79	0.77
Reliance Industries	India (INR)	2458.9	53.39	61.73	67.25	70.95	76.44	80.08	83.20	89.37	100.44	124.13	36.9	3.66	2.62	2.76	2.60	2.53	2.60	2.71	2.94	3.36	4.29
Repsol	Spain (€)	16.5	1.66	1.49	1.65	1.41	1.24	1.16	0.89	1.45	1.62	1.71	18.4	2.20	2.08	2.12	1.88	1.65	1.31	1.02	1.65	1.85	1.95
Rosneft	Russia ($)	38.9	1.08	1.30	1.16	1.64	0.87	0.57	0.68	1.11	1.19	1.40	38.9	1.08	1.30	1.16	1.64	0.87	0.57	0.68	1.11	1.19	1.40
Royal Dutch Shell	UK (p)	102.8	190.29	247.12	253.42	198.92	215.92	136.19	139.49	187.20	206.14	229.77	156.1	2.95	3.96	4.02	3.11	3.56	2.11	2.20	2.96	3.26	3.63
Sasol	S.Africa (Rd)	261.5	26.58	33.86	42.28	52.63	60.16	42.09	20.03	37.24	45.65	58.47	18.8	3.49	4.82	5.43	5.94	5.83	3.67	1.50	2.72	3.34	4.26
Sinopec	China (Rmb)	693.7	0.81	0.79	0.70	0.50	0.42	0.31	0.38	0.55	0.65	0.71	89.5	0.09	0.09	0.09	0.08	0.07	0.05	0.06	0.08	0.10	0.10
Statoil	Norway (Nkr)	384.8	13.20	15.37	17.49	14.94	12.08	5.91	7.15	12.16	13.76	14.91	46.3	2.19	2.74	3.00	2.54	1.92	0.76	0.93	1.58	1.79	1.94
Suncor Energy	Canada (C$)	50.7	-	3.59	3.16	3.13	3.15	0.95	1.33	1.75	1.69	2.38	38.2	-	3.53	3.18	2.94	2.71	0.72	1.00	1.32	1.27	1.79
Surgutneftegaz	Russia ($)	1527.5	0.10	0.18	0.12	0.19	0.49	0.19	0.08	0.09	0.08	0.12	22.4	0.10	0.18	0.12	0.19	0.49	0.19	0.08	0.09	0.08	0.12
TOTAL	France ($)	91.6	6.05	7.08	6.97	6.29	5.62	3.88	3.05	4.28	4.86	5.23	102.1	6.05	7.08	6.97	6.29	5.62	3.88	3.05	4.28	4.86	5.23

Note: BG Group and BP both report in US$ but trade in £, hence local reporting is in US$ but local market capitalisation is in £.

For Inpex, Oil & Natural Gas and Reliance, FY XX refers to year ending 31 March XX. This applies to all the tables.

For Sasol, FY XX refers to year ending 30 June XX. This applies to all the tables.

		M.Cap					Local/Reporting						M.Cap						US$				
Company	Country	LC bn	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	$ bn	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
Anadarko	US ($)	34.7	1.8	3.37	3.54	4.00	4.13	-2.40	-1.40	1.10	2.30	3.30	34.7	1.8	3.37	3.54	4.00	4.13	-2.40	-1.40	1.10	2.30	3.30
Apache Corp.	US ($)	16.1	8.8	12.01	9.50	8.09	5.93	-1.15	-0.70	1.65	2.30	3.45	16.1	8.8	12.01	9.50	8.09	5.93	-1.15	-0.70	1.65	2.30	3.45
Cabot Oil & Gas	US ($)	9.4	0.2	0.33	0.33	0.71	0.97	0.20	0.40	1.55	2.30	2.80	9.4	0.2	0.33	0.33	0.71	0.97	0.20	0.40	1.55	2.30	2.80
Canadian Natural	Canada (C$)	30.0	-	2.40	1.72	2.22	3.47	-0.15	0.25	1.89	2.56	3.48	22.6	-	2.35	1.73	2.09	2.98	-0.11	0.19	1.43	1.93	2.63
Chesapeake	US ($)	4.8	3.0	2.81	0.61	1.50	1.43	-0.20	-0.65	0.15	0.55	0.75	4.8	3.0	2.81	0.61	1.50	1.43	-0.20	-0.65	0.15	0.55	0.75
CNOOC Ltd	China (Rmb)	394.0	1.2	1.57	1.42	1.26	1.34	0.49	0.47	0.91	1.07	1.31	50.8	0.2	0.24	0.23	0.20	0.22	0.08	0.07	0.13	0.16	0.19
Concho	US ($)	12.6	2.7	4.16	3.74	3.54	4.03	0.95	0.45	0.75	2.10	3.45	12.6	2.7	4.16	3.74	3.54	4.03	0.95	0.45	0.75	2.10	3.45
ConocoPhillips	US ($)	58.2	6.0	8.76	5.53	5.70	5.31	-1.15	-0.60	1.45	2.35	2.85	58.2	6.0	8.76	5.53	5.70	5.31	-1.15	-0.60	1.45	2.35	2.85
Continental	US ($)	11.5	0.9	1.33	1.68	2.67	3.43	-0.40	0.10	1.35	2.10	2.85	11.5	0.9	1.33	1.68	2.67	3.43	-0.40	0.10	1.35	2.10	2.85
Crescent Point	Canada (C$)	7.4	-	0.72	0.57	1.44	1.30	0.09	-0.10	0.09	0.16	0.51	5.6	-	0.71	0.58	1.35	1.12	0.07	-0.07	0.07	0.12	0.39
Devon Energy	US ($)	16.5	5.9	6.06	3.26	4.26	4.92	1.95	-0.85	1.80	3.15	4.40	16.5	5.9	6.06	3.26	4.26	4.92	1.95	-0.85	1.80	3.15	4.40
Encana	Canada (US$)	5.6	-	-0.72	1.35	1.09	1.35	-0.18	0.06	0.68	1.25	1.95	5.6	-	0.17	1.35	0.32	4.58	-0.18	0.06	0.68	1.25	1.95
EOG Resources	US ($)	42.2	0.6	1.89	2.84	4.11	4.95	0.50	1.35	2.95	4.80	5.30	42.2	0.6	1.89	2.84	4.11	4.95	-0.45	-0.35	1.55	2.55	3.70
Hess Corp.	US ($)	16.2	5.1	5.89	5.87	5.61	4.25	-2.25	-1.15	0.55	2.35	2.35	16.2	5.1	5.89	5.87	5.61	4.25	-3.70	-3.55	-1.30	-0.50	0.40
Lundin Petroleum	Sweden ($)	33.3	0.5	0.67	1.03	0.88	-1.37	-1.32	0.55	0.71	0.69	0.58	3.9	0.5	0.67	1.03	0.88	-1.37	-1.32	0.55	0.71	0.69	0.58
Marathon Oil	US ($)	11.1	3.7	3.25	2.45	2.70	1.84	-1.85	-1.80	-0.60	0.00	0.60	11.1	3.7	3.25	2.45	2.70	1.84	-1.85	-1.80	-0.60	0.00	0.60
Murphy Oil	US ($)	4.9	4.1	6.02	5.69	4.68	3.40	-4.50	-3.00	-1.65	-1.40	-1.15	4.9	4.1	6.02	5.69	4.68	3.40	-4.50	-3.00	-1.65	-1.40	-1.15
Noble Energy	US ($)	13.2	2.1	2.65	2.52	2.90	2.43	0.20	-0.40	0.45	1.25	2.25	13.2	2.1	2.65	2.52	2.90	2.43	0.20	-0.40	0.45	1.25	2.25
Occidental	US ($)	53.2	5.7	8.40	7.10	6.96	5.87	0.20	0.65	2.55	3.40	4.45	53.2	5.7	8.40	7.10	6.96	5.87	0.20	0.65	2.55	3.40	4.45
Oil & Natural Gas	India (INR)	1930.1	22.6	26.26	29.23	28.30	30.98	21.43	31.62	37.09	38.04	35.22	28.9	0.5	0.58	0.61	0.52	0.52	0.34	0.53	0.59	0.60	0.57
Pioneer Natural	US ($)	17.7	1.7	4.01	3.68	4.41	4.79	-0.10	-0.50	0.50	2.85	5.60	17.7	1.7	4.01	3.68	4.41	4.79	-0.10	-0.50	0.50	2.85	5.60
PTT E&P (F)	Thailand (Bt)	291.8	11.8	14.17	15.55	15.88	13.09	5.71	5.29	7.83	8.34	8.81	8.1	0.4	0.46	0.50	0.52	0.40	0.17	0.16	0.23	0.24	0.26
Range Resources	US ($)	6.2	0.5	1.10	0.95	1.43	1.57	0.10	-0.70	0.55	1.75	2.80	6.2	0.5	1.10	0.95	1.43	1.57	0.10	-0.70	0.55	1.75	2.80
Southwestern	US ($)	5.9	1.7	1.82	1.39	2.01	2.27	0.16	0.10	1.05	1.65	1.75	5.9	1.7	1.82	1.39	2.01	2.27	0.16	0.10	1.05	1.65	1.75
Tullow	UK ($)	1.8	0.0	0.72	0.01	0.26	-1.20	0.06	-0.01	0.10	0.17	0.28	2.8	0.0	0.72	0.01	0.26	-1.20	0.06	-0.01	0.10	0.17	0.28
Woodside	Australia (A$)	25.2	1.8	2.09	2.51	2.07	2.94	1.27	0.86	1.46	1.89	1.94	17.4	1.8	2.09	2.51	2.07	2.94	1.27	0.86	1.46	1.89	1.94

Note: CNOOC reports in Rmb, trades in HK$

Lundin reports in US$, trades in SEK

Tullow reports in US$, trades in £

Woodside reports in US$, trades in AU$

Company forecasts (Adj CEPS)

		M.Cap	Local/Reporting										M.Cap	US$									
Company	Country	LC bn	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	$ bn	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
BG Group	UK ($)	32.9	2.11	2.19	2.09	2.14	2.00	1.30	1.67	2.36	2.67	2.98	49.9	2.11	2.19	2.09	2.14	2.00	1.30	1.67	2.36	2.67	2.98
BP	UK ($)	61.9	2.65	1.89	1.93	1.57	1.65	1.74	1.10	1.25	1.38	1.49	94.0	2.65	1.89	1.93	1.57	1.65	1.74	1.10	1.25	1.38	1.49
Cenovus	Canada (C$)	15.0	-	4.32	4.80	4.76	4.59	2.07	1.81	3.17	3.62	3.83	11.3	-	4.25	4.84	4.48	3.95	1.56	1.36	2.40	2.73	2.89
Chevron Corp.	US ($)	144.3	15.59	19.38	19.57	18.80	16.87	10.50	13.55	16.67	18.02	19.36	144.3	15.59	19.38	19.57	18.80	16.87	10.50	13.55	16.67	18.02	19.36
Eni	Italy (€)	52.0	4.06	3.97	3.43	3.02	4.17	3.73	3.68	4.40	4.92	5.27	58.0	5.35	5.53	4.41	4.01	5.54	4.21	4.19	5.01	5.61	6.01
ExxonMobil	US ($)	302.1	9.10	11.56	12.00	11.23	11.69	7.89	7.55	8.94	9.44	9.89	302.1	9.10	11.56	12.00	11.23	11.69	7.89	7.55	8.94	9.44	9.89
GALP	Portugal (€)	7.4	0.71	0.40	0.35	0.95	1.09	1.84	1.33	1.66	2.12	2.57	8.3	0.93	0.56	0.45	1.27	1.45	2.08	1.52	1.90	2.41	2.93
Gazprom	Russia ($)	49.6	3.57	4.89	3.79	4.89	3.97	2.47	2.52	2.97	3.41	3.44	49.6	3.57	4.89	3.79	4.89	3.97	2.47	2.52	2.97	3.41	3.44
Gazprom Neft	Russia ($)	11.0	5.71	6.36	7.89	9.17	8.08	6.69	5.12	7.89	9.37	9.25	11.0	5.71	6.36	7.89	9.17	8.08	6.69	5.12	7.89	9.37	9.25
Husky Energy	Canada (C$)	21.7	-	5.19	4.43	4.74	4.77	3.50	4.02	4.88	5.13	5.30	16.3	-	5.10	4.47	4.46	4.11	2.64	3.03	3.68	3.87	4.00
Imperial Oil	Canada (C$)	37.1	-	4.70	5.94	5.03	6.24	3.41	4.55	6.07	6.27	7.07	27.9	-	4.61	5.98	4.73	5.37	2.58	3.43	4.58	4.73	5.34
Lukoil	Russia ($)	27.4	16.39	19.50	24.55	23.47	20.12	17.20	14.64	19.26	21.14	22.76	27.4	16.39	19.50	24.55	23.47	20.12	17.20	14.64	19.26	21.14	22.76
MOL	Hungary (HUF)	1,358	3962	5077	4727	5574	3755	4900	4954	5368	6294	6476	4.8	19.05	25.24	21.01	24.95	16.14	17.73	18.02	19.52	22.89	23.55
Novatek	Russia ($)	28.2	4.87	8.01	7.62	9.19	9.37	8.31	10.34	12.55	12.77	12.72	28.2	4.87	8.01	7.62	9.19	9.37	8.31	10.34	12.55	12.77	12.72
OMV	Austria (€)	7.3	11.16	12.62	14.21	10.31	12.80	10.16	8.63	10.47	10.95	11.70	8.1	14.74	17.57	18.27	13.69	17.01	11.46	9.84	11.93	12.48	13.34
Petrobras (PN)	Brazil (BrR)	121.4	3.84	3.92	3.31	3.99	0.70	3.07	3.77	5.76	6.87	7.57	31.6	2.18	2.34	1.69	1.83	0.30	0.93	1.03	1.58	1.84	1.96
PetroChina	China (Rmb)	1846.2	1.38	1.48	1.46	1.60	1.56	1.22	1.26	1.54	1.71	1.86	238.2	0.20	0.23	0.23	0.26	0.25	0.19	0.19	0.23	0.25	0.27
PTT Public	Thailand (Bt)	742.6	44.25	55.84	55.56	60.86	65.92	55.15	58.47	66.01	67.12	69.78	20.7	1.40	1.83	1.79	1.98	2.03	1.61	1.63	1.84	1.87	1.94
Reliance Industries	India (INR)	2458.9	90.15	104.86	108.88	109.12	114.50	119.32	123.99	139.97	157.86	183.84	36.9	2.53	2.17	2.22	2.00	1.90	1.94	2.01	2.29	2.64	3.18
Repsol	Spain (€)	16.5	7.14	4.46	3.83	2.34	2.44	3.30	3.18	3.82	4.09	4.26	18.4	9.42	6.21	4.92	3.10	3.25	3.73	3.62	4.36	4.66	4.85
Rosneft	Russia ($)	38.9	1.58	1.64	1.76	3.70	3.99	2.50	2.13	2.16	2.12	1.93	38.9	1.58	1.64	1.76	3.70	3.99	2.50	2.13	2.16	2.12	1.93
Royal Dutch Shell	UK (p)	102.8	350.31	433.44	429.99	380.86	374.19	308.68	331.64	386.27	410.19	440.75	156.1	5.42	6.95	6.81	5.96	6.17	4.79	5.24	6.10	6.48	6.96
Sasol	S.Africa (Rd)	261.5	37.81	46.19	58.27	72.49	82.35	75.38	42.75	59.98	69.04	82.90	18.8	4.93	6.54	7.45	8.16	7.96	6.55	3.14	4.33	5.00	6.00
Sinopec	China (Rmb)	693.7	1.49	1.53	1.47	1.21	1.12	1.06	1.18	1.40	1.55	1.64	89.5	0.17	0.18	0.18	0.20	0.18	0.17	0.17	0.21	0.23	0.24
Statoil	Norway (Nkr)	384.8	42.43	39.06	47.41	28.87	30.15	31.73	34.57	41.18	43.70	45.96	46.3	7.04	6.97	8.15	4.91	4.78	4.11	4.49	5.35	5.68	5.97
Suncor Energy	Canada (C$)	50.7	-	6.17	6.30	6.26	6.17	4.56	4.97	5.86	5.93	7.12	38.2	-	6.06	6.35	5.89	5.31	3.44	3.75	4.42	4.48	5.38
Surgutneftegaz	Russia ($)	1527.5	0.18	0.23	0.22	0.24	0.16	0.13	0.17	0.18	0.19	0.18	22.4	0.18	0.23	0.22	0.24	0.16	0.13	0.17	0.18	0.19	0.18
TOTAL	France ($)	91.6	11.67	13.39	12.28	11.59	9.37	8.96	8.38	10.12	11.08	11.73	102.1	11.67	13.39	12.28	11.59	9.37	8.96	8.38	10.12	11.08	11.73

Company	Country	M.Cap	Local/Reporting										M.Cap	US$									
		LC bn	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	$ bn	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
Anadarko	US ($)	34.7	10.69	13.65	14.29	14.62	17.83	8.70	8.40	12.30	14.45	16.35	34.7	10.69	13.65	14.29	14.62	17.83	8.70	8.40	12.30	14.45	16.35
Apache Corp.	US ($)	16.1	18.98	24.12	22.93	22.36	18.94	7.00	7.75	11.00	12.10	13.90	16.1	18.98	24.12	22.93	22.36	18.94	7.00	7.75	11.00	12.10	13.90
Cabot Oil & Gas	US ($)	9.4	1.24	1.40	1.69	2.73	3.09	1.90	2.45	4.45	5.65	6.75	9.4	1.24	1.40	1.69	2.73	3.09	1.90	2.45	4.45	5.65	6.75
Canadian Natural	Canada (C$)	30.0	-	5.70	5.24	6.65	8.38	4.66	5.30	7.31	8.68	9.83	22.6	-	5.60	5.28	6.26	7.20	3.52	4.00	5.52	6.55	7.42
Chesapeake	US ($)	4.8	5.59	5.70	3.03	5.02	5.19	2.05	0.75	2.05	2.75	3.10	4.8	5.59	5.70	3.03	5.02	5.19	2.05	0.75	2.05	2.75	3.10
CNOOC Ltd	China (Rmb)	394.0	1.81	2.25	2.16	2.52	2.65	2.19	2.26	2.76	2.91	3.24	50.8	0.26	0.34	0.34	0.41	0.42	0.34	0.34	0.41	0.43	0.48
Concho	US ($)	12.6	7.02	10.84	12.23	13.93	16.31	12.55	12.80	14.30	17.60	21.00	12.6	7.02	10.84	12.23	13.93	16.31	12.55	12.80	14.30	17.60	21.00
ConocoPhillips	US ($)	58.2	10.18	14.41	10.96	11.83	13.60	6.15	7.30	10.10	11.70	12.65	58.2	10.18	14.41	10.96	11.83	13.60	6.15	7.30	10.10	11.70	12.65
Continental	US ($)	11.5	2.10	3.35	4.61	7.02	9.43	4.15	5.15	7.55	9.20	11.00	11.5	2.10	3.35	4.61	7.02	9.43	4.15	5.15	7.55	9.20	11.00
Crescent Point	Canada (C$)	7.4	-	4.62	4.76	5.23	5.61	3.93	3.67	3.98	4.19	4.87	5.6	-	4.54	4.80	4.92	4.83	2.97	2.77	3.00	3.16	3.68
Devon Energy	US ($)	16.5	12.17	13.63	10.76	12.37	14.31	9.95	5.65	9.60	11.85	13.90	16.5	12.17	13.63	10.76	12.37	14.31	9.95	5.65	9.60	11.85	13.90
Encana	Canada (US$)	5.6	-	5.66	4.66	3.42	3.61	1.73	1.63	2.54	3.42	4.61	5.6	-	5.66	4.66	3.42	3.61	1.73	1.63	2.54	3.42	4.61
EOG Resources	US ($)	42.2	5.67	8.38	10.52	13.28	15.01	7.05	7.40	10.35	12.20	14.35	42.2	5.67	8.38	10.52	13.28	15.01	7.05	7.40	10.35	12.20	14.35
Hess Corp.	US ($)	16.2	13.47	15.58	15.48	18.54	16.23	8.30	10.05	14.60	16.55	18.40	16.2	13.47	15.58	15.48	18.54	16.23	8.30	10.05	14.60	16.55	18.40
Lundin Petroleum	Sweden ($)	33.3	3.08	4.35	5.57	4.99	3.92	1.23	3.98	5.33	5.03	4.45	3.9	3.08	4.35	5.57	4.99	3.92	1.23	3.98	5.33	5.03	4.45
Marathon Oil	US ($)	11.1	7.05	8.39	6.38	8.39	6.98	2.55	3.30	5.00	6.30	7.90	11.1	7.05	8.39	6.38	8.39	6.98	2.55	3.30	5.00	6.30	7.90
Murphy Oil	US ($)	4.9	12.20	15.09	15.79	16.85	17.63	6.30	7.90	10.30	11.20	11.50	4.9	12.20	15.09	15.79	16.85	17.63	6.30	7.90	10.30	11.20	11.50
Noble Energy	US ($)	13.2	5.41	6.32	7.53	8.90	8.59	5.45	5.15	6.75	8.60	11.00	13.2	5.41	6.32	7.53	8.90	8.59	5.45	5.15	6.75	8.60	11.00
Occidental	US ($)	53.2	10.15	14.29	14.67	14.43	12.74	5.65	6.90	9.95	11.45	13.10	53.2	10.15	14.29	14.67	14.43	12.74	5.65	6.90	9.95	11.45	13.10
Oil & Natural Gas	India (INR)	1,930.1	44.50	50.37	44.32	42.45	50.37	42.50	54.76	61.34	63.50	62.68	28.9	0.94	1.11	0.93	0.78	0.84	0.67	0.89	0.97	1.01	1.01
Pioneer Natural	US ($)	17.7	8.86	12.86	14.02	15.32	16.30	10.25	11.35	14.55	20.35	27.65	17.7	8.86	12.86	14.02	15.32	16.30	10.25	11.35	14.55	20.35	27.65
PTT E&P (F)	Thailand (Bt)	291.8	23.84	23.75	27.34	26.84	34.06	30.37	32.18	34.27	33.03	33.96	8.1	0.73	0.78	0.88	0.88	1.05	0.89	0.94	1.01	0.97	1.00
Range Resources	US ($)	6.2	3.48	4.56	4.60	5.73	6.22	4.05	3.55	6.50	9.50	12.50	6.2	3.48	4.56	4.60	5.73	6.22	4.05	3.55	6.50	9.50	12.50
Southwestern	US ($)	5.9	4.41	4.87	4.32	5.35	6.24	3.35	3.65	5.45	5.95	6.50	5.9	4.41	4.87	4.32	5.35	6.24	3.35	3.65	5.45	5.95	6.50
Tullow	UK ($)	1.8	0.70	1.46	2.08	2.83	3.23	1.32	1.45	1.91	2.17	2.44	2.8	1.40	2.91	4.16	5.66	6.46	2.64	2.90	3.81	4.34	4.87
Woodside	Australia (A$)	25.2	2.81	2.87	3.96	3.54	4.69	2.94	2.44	3.10	3.63	3.64	17.4	2.81	2.87	3.96	3.54	4.69	2.94	2.44	3.10	3.63	3.64

Adj EPS growth ($)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	-40%	16%	14%	-2%	-4%	-8%	-68%	50%	106%	23%	18%	3%	-6%	-31%	7%
BP	UK ($)	94.0	-44%	41%	6%	-17%	-26%	-5%	-46%	-1%	40%	11%	9%	-3%	-16%	-27%	-2%
Cenovus	Canada (C$)	11.3	-	-	-	-28%	26%	-51%	-95%	-447%	-421%	47%	15%	-	-21%	-	1%
Chevron Corp.	US ($)	144.3	-58%	94%	41%	-8%	-8%	-16%	-72%	2%	88%	19%	17%	14%	-12%	-47%	-6%
Eni	Italy (€)	58.0	-51%	25%	8%	-7%	-36%	-16%	-72%	49%	124%	23%	17%	-8%	-27%	-35%	6%
ExxonMobil	US ($)	302.1	-53%	60%	34%	-2%	-11%	-6%	-46%	-7%	32%	5%	4%	12%	-8%	-29%	-6%
GALP	Portugal (€)	8.3	-57%	36%	-14%	33%	-11%	21%	24%	-22%	17%	30%	30%	11%	3%	-1%	14%
Gazprom	Russia ($)	49.6	2%	23%	39%	-14%	-7%	-79%	126%	42%	19%	9%	-1%	-22%	-56%	79%	33%
Gazprom Neft	Russia ($)	11.0	-35%	4%	70%	6%	-2%	-36%	-9%	34%	57%	13%	-5%	3%	-21%	10%	15%
Husky Energy	Canada (C$)	16.3	-	-	-	-14%	-6%	-9%	-101%	-2671%	172%	-2%	26%	-	-7%	-62%	-13%
Imperial Oil	Canada (C$)	27.9	-	-	-	15%	-30%	22%	-74%	74%	56%	3%	17%	-	-7%	-33%	-3%
Lukoil	Russia ($)	27.4	-24%	32%	19%	9%	-28%	-39%	-34%	44%	69%	2%	10%	-6%	-34%	-2%	13%
MOL	Hungary (HUF)	4.8	-68%	188%	-2%	-19%	-32%	9%	25%	-28%	19%	27%	3%	11%	-14%	-5%	7%
Novatek	Russia ($)	28.2	-13%	63%	196%	-43%	54%	-63%	85%	31%	22%	32%	23%	9%	-25%	56%	37%
OMV	Austria (€)	8.1	-77%	78%	-4%	28%	-26%	2%	-32%	-31%	48%	12%	12%	11%	-13%	-31%	-3%
Petrobras	Brazil (BrR)	31.6	-16%	11%	-20%	-46%	0%	-185%	-115%	108%	173%	36%	12%	-184%	-	-	-206%
PetroChina	China (Rmb)	238.2	-9%	37%	0%	-11%	15%	-17%	-56%	-5%	84%	29%	19%	3%	-2%	-36%	3%
PTT Public Company	Thailand (Bt)	20.7	-4%	49%	44%	-12%	6%	-23%	-17%	4%	13%	-7%	-2%	9%	-10%	-7%	-2%
Reliance Industries	India (INR)	36.9	11%	175%	-28%	5%	-6%	-3%	3%	4%	9%	14%	28%	14%	-4%	3%	11%
Repsol	Spain (€)	18.4	-57%	55%	-6%	2%	-11%	-12%	-21%	-22%	63%	12%	6%	3%	-12%	-22%	3%
Rosneft	Russia ($)	38.9	-41%	60%	20%	-11%	42%	-47%	-34%	18%	63%	8%	18%	5%	-13%	-12%	10%
Royal Dutch Shell	UK (p)	156.1	-58%	55%	35%	1%	-23%	14%	-41%	4%	34%	10%	11%	13%	-6%	-21%	0%
Sasol	S.Africa (Rd)	18.8	-45%	23%	38%	13%	9%	-2%	-37%	-59%	81%	23%	28%	16%	4%	-49%	-6%
Sinopec	China (Rmb)	89.5	192%	16%	0%	-9%	-4%	-18%	-27%	15%	43%	19%	10%	-4%	-11%	-9%	9%
Statoil	Norway (Nkr)	46.3	-42%	13%	25%	10%	-15%	-25%	-60%	21%	70%	13%	8%	0%	-20%	-30%	0%
Suncor Energy	Canada (C$)	38.2	-	-	-	-10%	-8%	-8%	-74%	40%	32%	-3%	41%	-	-8%	-39%	-8%
Surgutneftegaz	Russia ($)	22.4	-40%	20%	90%	-36%	57%	163%	-61%	-60%	20%	-16%	52%	43%	103%	-60%	-25%
TOTAL	France ($)	102.1	-44%	21%	17%	-2%	-10%	-11%	-31%	-22%	41%	14%	8%	2%	-10%	-26%	-1%
Global			-20%	43%	25%	-7%	-3%	13%	-18%	8%	52%	14%	12%	19%	-1%	-26%	9%
Big Five			-51%	56%	28%	-5%	-14%	-3%	-44%	-4%	43%	11%	9%	9%	-10%	-30%	-3%
North America			-54%	73%	36%	-4%	-10%	-8%	-55%	-30%	46%	9%	13%	13%	-10%	-36%	-6%
Europe			-49%	38%	17%	-2%	-19%	-2%	-39%	2%	53%	14%	11%	5%	-12%	-26%	1%
EM			8%	33%	25%	-13%	9%	43%	8%	24%	54%	16%	12%	35%	14%	-20%	27%

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	n/m	n/m	85%	5%	13%	3%	n/m	-42%	n/m	>100%	44%	n/m	8%	-	-4%
Apache Corp.	US ($)	16.1	-50%	58%	36%	-21%	-15%	-27%	n/m	-39%	n/m	40%	50%	1%	-21%	-	-10%
Cabot Oil & Gas	US ($)	9.4	-25%	-43%	35%	0%	>100%	37%	-80%	>100%	>100%	48%	22%	18%	72%	-36%	24%
Canadian Natural	Canada (C$)	22.6	-	-	-	-26%	20%	43%	n/m	n/m	>100%	35%	36%	18%	31%	-75%	-3%
Chesapeake Energy	US ($)	4.8	-27%	14%	-5%	-78%	>100%	-5%	n/m	>100%	n/m	>100%	37%	-11%	54%	-	-12%
CNOOC Ltd	China (Rmb)	50.8	-33%	80%	34%	-5%	-9%	5%	-64%	-7%	89%	17%	22%	17%	-2%	-43%	-2%
Concho	US ($)	12.6	-14%	78%	52%	-10%	-6%	14%	-76%	-53%	68%	>100%	65%	21%	4%	-67%	-3%
ConocoPhillips	US ($)	58.2	-66%	63%	47%	-37%	3%	-7%	n/m	-48%	n/m	63%	21%	8%	-2%	-	-12%
Continental	US ($)	11.5	-63%	>100%	55%	27%	59%	29%	n/m	n/m	>100%	55%	36%	56%	43%	-83%	-4%
Crescent Point	Canada (C$)	5.6	-	-	-	-18%	>100%	-18%	-94%	n/m	n/m	78%	>100%	n/m	39%	-	-19%
Devon Energy	US ($)	16.5	-62%	62%	2%	-46%	31%	15%	-60%	n/m	n/m	75%	40%	6%	23%	-	-2%
Encana	Canada (US$)	5.6	-	-	-	>100%	-76%	>100%	n/m	n/m	>100%	85%	55%	13%	84%	-89%	-16%
EOG Resources	US ($)	42.2	-60%	-60%	>100%	50%	45%	20%	n/m	-22%	n/m	64%	45%	27%	32%	-	-6%
Hess Corp.	US ($)	16.2	-69%	>100%	14%	0%	-4%	-24%	n/m	-4%	-63%	-61%	n/m	13%	-15%	-	-38%
Lundin Petroleum	Sweden ($)	3.9	-	-24%	25%	53%	-15%	n/m	-4%	n/m	29%	-3%	-15%	n/m	-	-	n/m
Marathon Oil	US ($)	11.1	-75%	>100%	-11%	-25%	10%	-32%	n/m	-3%	-67%	n/m	>100%	3%	-13%	-	-20%
Murphy Oil	US ($)	4.9	-59%	16%	46%	-5%	-18%	-27%	n/m	-33%	-45%	-15%	-18%	-1%	-23%	-	n/m
Noble Energy	US ($)	13.2	-58%	25%	26%	-5%	15%	-16%	-92%	n/m	n/m	>100%	80%	8%	-2%	-	-2%
Occidental Petroleum	US ($)	53.2	-58%	50%	48%	-16%	-2%	-16%	-97%	>100%	>100%	33%	31%	9%	-9%	-67%	-5%
Oil & Natural Gas	India (INR)	28.9	-13%	-5%	21%	6%	-15%	-1%	-35%	58%	11%	2%	-6%	0%	-8%	2%	2%
Pioneer Natural Res.	US ($)	17.7	n/m	n/m	>100%	-8%	20%	9%	n/m	>100%	n/m	>100%	97%	n/m	14%	-	3%
PTT E&P (F)	Thailand (Bt)	8.1	-43%	74%	28%	8%	3%	-22%	-58%	-7%	48%	7%	6%	14%	-10%	-38%	-9%
Range Resources	US ($)	6.2	-47%	-51%	>100%	-14%	51%	10%	-94%	n/m	n/m	>100%	60%	9%	29%	-	12%
Southwestern Energy	US ($)	5.9	-2%	16%	5%	-24%	44%	13%	-93%	-40%	>100%	56%	7%	9%	28%	-80%	-5%
Tullow	UK ($)	2.8	-95%	67%	>100%	-99%	>100%	n/m	n/m	n/m	n/m	64%	67%	n/m	-	-89%	n/m
Woodside Petroleum	Australia (A$)	17.4	-37%	30%	14%	20%	-18%	42%	-57%	-32%	69%	30%	2%	16%	8%	-46%	-8%
North America			-56%	51%	36%	-18%	8%	-1%	-73%	-22%	-72%	56%	41%	12%	15%	-75%	-10%
International			-26%	50%	28%	1%	-10%	8%	-54%	22%	55%	13%	12%	12%	-3%	-26%	-2%
Global			-45%	50%	34%	-10%	2%	2%	-58%	69%	65%	34%	29%	12%	9%	-50%	-7%

Adj CEPS growth ($)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	-24%	26%	4%	-5%	2%	-7%	-35%	28%	42%	13%	12%	4%	-2%	-9%	8%
BP	UK ($)	94.0	-5%	57%	-29%	2%	-19%	5%	5%	-37%	14%	11%	8%	0%	-8%	-19%	-2%
Cenovus	Canada (C$)	11.3	-	-	-	14%	-7%	-12%	-60%	-13%	76%	14%	6%	-	-10%	-41%	-6%
Chevron Corp.	US ($)	144.3	-29%	44%	24%	1%	-4%	-10%	-38%	29%	23%	8%	7%	9%	-7%	-10%	3%
Eni	Italy (€)	58.0	-50%	23%	3%	-20%	-9%	38%	-24%	0%	20%	12%	7%	5%	12%	-13%	2%
ExxonMobil	US ($)	302.1	-48%	47%	27%	4%	-6%	4%	-33%	-4%	18%	6%	5%	13%	-1%	-20%	-3%
GALP	Portugal (€)	8.3	-21%	10%	-41%	-19%	180%	14%	43%	-27%	25%	27%	22%	11%	79%	2%	15%
Gazprom	Russia ($)	49.6	-18%	22%	37%	-22%	29%	-19%	-38%	2%	18%	15%	1%	6%	2%	-20%	-3%
Gazprom Neft	Russia ($)	11.0	-36%	55%	11%	24%	16%	-12%	-17%	-23%	54%	19%	-1%	17%	1%	-20%	3%
Husky Energy	Canada (C$)	16.3	-	-	-	-12%	0%	-8%	-36%	15%	21%	5%	3%	-	-4%	-14%	-1%
Imperial Oil	Canada (C$)	27.9	-	-	-	30%	-21%	13%	-52%	33%	33%	3%	13%	-	-5%	-20%	0%
Lukoil	Russia ($)	27.4	-38%	56%	19%	26%	-4%	-14%	-15%	-15%	32%	10%	8%	14%	-9%	-15%	2%
MOL	Hungary (HUF)	4.8	-19%	24%	33%	-17%	19%	-35%	10%	2%	8%	17%	3%	1%	-12%	6%	8%
Novatek	Russia ($)	28.2	-8%	26%	65%	-5%	21%	2%	-11%	24%	21%	2%	0%	19%	11%	5%	6%
OMV	Austria (€)	8.1	-33%	43%	19%	4%	-25%	24%	-33%	-14%	21%	5%	7%	11%	-4%	-24%	-5%
Petrobras	Brazil (BrR)	31.6	-9%	-15%	7%	-28%	8%	-84%	212%	11%	53%	16%	7%	-35%	-58%	86%	46%
PetroChina	China (Rmb)	238.2	-5%	31%	12%	1%	12%	-3%	-25%	0%	19%	11%	9%	10%	4%	-13%	2%
PTT Public Company	Thailand (Bt)	20.7	8%	40%	31%	-2%	11%	2%	-21%	1%	13%	2%	4%	15%	7%	-10%	-1%
Reliance Industries	India (INR)	36.9	21%	38%	-14%	2%	-10%	-5%	2%	4%	14%	15%	21%	1%	-8%	3%	11%
Repsol	Spain (€)	18.4	-1%	60%	-34%	-21%	-37%	5%	15%	-3%	20%	7%	4%	-11%	-19%	6%	8%
Rosneft	Russia ($)	38.9	-28%	47%	4%	7%	111%	8%	-37%	-15%	1%	-2%	-9%	30%	51%	-27%	-14%
Royal Dutch Shell	UK (p)	156.1	-34%	-38%	28%	-2%	-13%	3%	-22%	9%	16%	6%	7%	-7%	-5%	-8%	2%
Sasol	S.Africa (Rd)	18.8	-37%	25%	33%	14%	9%	-2%	-18%	-52%	38%	16%	20%	15%	3%	-37%	-6%
Sinopec	China (Rmb)	89.5	60%	15%	5%	-1%	9%	-9%	-8%	5%	19%	10%	6%	4%	0%	-1%	6%
Statoil	Norway (Nkr)	46.3	21%	31%	-1%	17%	-40%	-3%	-14%	9%	19%	6%	5%	-2%	-23%	-3%	5%
Suncor Energy	Canada (C$)	38.2	-	-	-	5%	-7%	-10%	-35%	9%	18%	1%	20%	-	-9%	-16%	0%
Surgutneftegaz	Russia ($)	22.4	-40%	12%	29%	-3%	7%	-35%	-19%	34%	8%	4%	-8%	-1%	-17%	4%	2%
TOTAL	France ($)	102.1	-9%	13%	15%	-8%	-6%	-19%	-4%	-6%	21%	9%	6%	-2%	-13%	-5%	5%
Global			-15%	26%	14%	-2%	8%	-4%	-12%	0%	21%	9%	6%	7%	-6%	-16%	0%
Big Five			-25%	26%	14%	0%	-9%	-2%	-18%	-2%	18%	8%	7%	5%	-8%	-12%	2%
North America			-40%	46%	26%	4%	-6%	-2%	-36%	11%	23%	6%	8%	8%	-6%	-14%	1%
Europe			-15%	20%	2%	-3%	-13%	1%	-11%	-5%	19%	9%	7%	0%	-7%	-11%	2%
EM			-5%	23%	18%	-5%	29%	-9%	-3%	0%	22%	11%	4%	13%	-1%	-22%	-1%

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	-50%	40%	28%	5%	2%	22%	-51%	-3%	46%	17%	13%	**18%**	**12%**	**-31%**	**-2%**
Apache Corp.	US ($)	16.1	-37%	42%	27%	-5%	-2%	-15%	-63%	11%	42%	10%	15%	**7%**	**-9%**	**-36%**	**-6%**
Cabot Oil & Gas	US ($)	9.4	-4%	-13%	13%	20%	62%	13%	-39%	29%	81%	27%	19%	**17%**	**35%**	**-11%**	**17%**
Canadian Natural	Canada (C$)	22.6	-	-	-	-6%	18%	15%	-51%	14%	38%	19%	13%	**6%**	**17%**	**-26%**	**1%**
Chesapeake Energy	US ($)	4.8	-33%	3%	2%	-47%	66%	3%	-61%	-63%	172%	34%	13%	**-1%**	**31%**	**-62%**	**-10%**
CNOOC Ltd	China (Rmb)	50.8	-15%	74%	29%	0%	20%	3%	-19%	0%	19%	5%	11%	**23%**	**11%**	**-10%**	**2%**
Concho	US ($)	12.6	13%	39%	54%	13%	14%	17%	-23%	2%	12%	23%	19%	**26%**	**16%**	**-11%**	**5%**
ConocoPhillips	US ($)	58.2	-43%	17%	42%	-24%	8%	15%	-55%	19%	38%	16%	8%	**9%**	**11%**	**-27%**	**-1%**
Continental	US ($)	11.5	-42%	67%	60%	38%	52%	34%	-56%	24%	46%	22%	20%	**50%**	**43%**	**-26%**	**3%**
Crescent Point	Canada (C$)	5.6	-	-	-	6%	3%	-2%	-38%	-7%	8%	5%	16%	**3%**	**0%**	**-24%**	**-5%**
Devon Energy	US ($)	16.5	-56%	38%	12%	-21%	15%	16%	-30%	-43%	70%	23%	17%	**10%**	**15%**	**-37%**	**-1%**
Encana	Canada (US$)	5.6	-	-	-	-18%	-27%	5%	-52%	-6%	56%	35%	35%	**-12%**	**-12%**	**-33%**	**5%**
EOG Resources	US ($)	42.2	-29%	-8%	48%	26%	26%	13%	-53%	5%	40%	18%	18%	**20%**	**19%**	**-30%**	**-1%**
Hess Corp.	US ($)	16.2	-26%	26%	16%	-1%	20%	-12%	-49%	21%	45%	13%	11%	**9%**	**2%**	**-21%**	**3%**
Lundin Petroleum	Sweden ($)	3.9	-	-27%	41%	28%	-10%	-21%	-69%	224%	34%	-6%	-11%	**-1%**	**-16%**	**1%**	**3%**
Marathon Oil	US ($)	11.1	-33%	8%	19%	-24%	31%	-17%	-63%	29%	52%	26%	25%	**1%**	**5%**	**-31%**	**2%**
Murphy Oil	US ($)	4.9	-35%	24%	24%	5%	7%	5%	-64%	25%	30%	9%	3%	**12%**	**6%**	**-33%**	**-8%**
Noble Energy	US ($)	13.2	-33%	15%	17%	19%	18%	-3%	-37%	-6%	31%	27%	28%	**13%**	**7%**	**-23%**	**5%**
Occidental Petroleum	US ($)	53.2	-35%	23%	41%	3%	-2%	-12%	-56%	22%	44%	15%	14%	**9%**	**-7%**	**-26%**	**1%**
Oil & Natural Gas	India (INR)	28.9	-9%	4%	18%	-16%	-16%	7%	-20%	33%	9%	3%	0%	**-1%**	**-5%**	**3%**	**4%**
Pioneer Natural Res.	US ($)	17.7	-46%	57%	45%	9%	9%	6%	-37%	11%	28%	40%	36%	**24%**	**8%**	**-17%**	**11%**
PTT E&P (F)	Thailand (Bt)	8.1	-16%	53%	6%	14%	-1%	20%	-15%	6%	6%	-4%	3%	**17%**	**9%**	**-5%**	**-1%**
Range Resources	US ($)	6.2	-24%	-15%	31%	1%	24%	9%	-35%	-12%	83%	46%	32%	**9%**	**16%**	**-24%**	**15%**
Southwestern Energy	US ($)	5.9	7%	15%	11%	-11%	24%	17%	-46%	9%	49%	9%	9%	**10%**	**20%**	**-24%**	**1%**
Tullow	UK ($)	2.8	-25%	74%	108%	43%	36%	14%	-59%	10%	31%	14%	12%	**52%**	**25%**	**-33%**	**-5%**
Woodside Petroleum	Australia (A$)	17.4	-26%	13%	2%	38%	-10%	32%	-37%	-17%	27%	17%	0%	**14%**	**9%**	**-28%**	**-5%**
North America			**-37%**	**23%**	**30%**	**-5%**	**14%**	**7%**	**-48%**	**8%**	**47%**	**20%**	**17%**	**11%**	**10%**	**-29%**	**0%**
International			**-15%**	**49%**	**26%**	**7%**	**10%**	**9%**	**-22%**	**14%**	**18%**	**5%**	**7%**	**19%**	**9%**	**-11%**	**1%**
Global			**-32%**	**30%**	**29%**	**-2%**	**13%**	**7%**	**-40%**	**10%**	**38%**	**16%**	**14%**	**13%**	**4%**	**-31%**	**0%**

Dividend growth ($)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	1%	6%	13%	10%	10%	0%	0%	20%	15%	15%	15%	8%	5%	10%	13%
BP	UK ($)	94.0	2%	-88%	314%	17%	9%	7%	1%	2%	2%	2%	2%	-7%	8%	1%	2%
Cenovus	Canada (C$)	11.3	-	-	-	13%	3%	1%	-30%	-25%	0%	0%	0%	-	2%	-27%	-12%
Chevron Corp.	US ($)	144.3	5%	7%	9%	14%	11%	8%	2%	3%	5%	5%	5%	10%	10%	2%	4%
Eni	Italy (€)	58.0	-26%	-5%	10%	-5%	5%	2%	-39%	1%	6%	2%	2%	1%	4%	-22%	-8%
ExxonMobil	US ($)	302.1	7%	5%	6%	18%	13%	10%	7%	5%	8%	10%	2%	10%	11%	6%	6%
GALP	Portugal (€)	8.3	-40%	-5%	5%	11%	24%	20%	2%	21%	0%	5%	20%	10%	22%	11%	9%
Gazprom	Russia ($)	49.6	420%	68%	141%	-37%	17%	-17%	-33%	100%	19%	9%	-1%	20%	-1%	16%	12%
Gazprom Neft	Russia ($)	11.0	-34%	38%	40%	28%	0%	-60%	50%	34%	57%	13%	-5%	0%	-37%	41%	27%
Husky Energy	Canada (C$)	16.3	-	-	-	3%	-7%	-9%	-12%	0%	0%	0%	0%	-	-8%	-6%	-3%
Imperial Oil	Canada (C$)	27.9	-	-	-	3%	4%	-3%	-9%	11%	10%	10%	5%	-	0%	1%	5%
Lukoil	Russia ($)	27.4	-19%	19%	31%	13%	19%	-18%	-10%	-7%	13%	2%	10%	12%	-1%	-8%	1%
MOL	Hungary (HUF)	4.8	-	-	-	-13%	35%	-20%	-14%	1%	30%	15%	0%	-	4%	-7%	5%
Novatek	Russia ($)	28.2	-8%	45%	54%	10%	11%	4%	-10%	31%	22%	32%	23%	23%	8%	9%	19%
OMV	Austria (€)	8.1	-4%	-5%	16%	1%	0%	0%	-15%	1%	0%	0%	0%	4%	4%	-7%	-3%
Petrobras (PN)	Brazil (BrR)	31.6	-23%	7%	-4%	0%	-10%	-100%	-	-9%	0%	-3%	11%	-	-	-	-
PetroChina	China (Rmb)	238.2	-9%	37%	0%	-11%	15%	-17%	-56%	-5%	84%	29%	19%	3%	-2%	-36%	3%
PTT Public Company	Thailand (Bt)	20.7	-34%	25%	53%	-18%	10%	2%	-24%	9%	8%	8%	0%	12%	6%	-9%	-1%
Reliance Industries	India (INR)	36.9	32%	-11%	0%	14%	13%	-18%	3%	7%	18%	18%	13%	-1%	-4%	5%	12%
Repsol	Spain (€)	18.4	-22%	17%	16%	-22%	6%	100%	-58%	3%	3%	3%	3%	18%	46%	-34%	-14%
Rosneft	Russia ($)	38.9	16%	25%	182%	1%	56%	-63%	-3%	18%	63%	8%	18%	15%	-24%	7%	19%
Royal Dutch Shell	UK (p)	156.1	5%	0%	0%	2%	5%	4%	0%	0%	0%	2%	2%	2%	5%	0%	1%
Sasol	S.Africa (Rd)	18.8	-34%	25%	40%	12%	-10%	5%	-39%	-56%	85%	23%	7%	13%	-3%	-48%	-8%
Sinopec	China (Rmb)	89.5	52%	20%	47%	3%	38%	-18%	-27%	15%	43%	19%	10%	15%	7%	-9%	9%
Statoil	Norway (Nkr)	46.3	-26%	9%	12%	0%	3%	-5%	-20%	-3%	1%	3%	3%	3%	-1%	-12%	-4%
Suncor Energy	Canada (C$)	38.2	-	-	-	21%	36%	28%	-3%	2%	10%	15%	15%	-	32%	0%	8%
Surgutneftegaz	Russia ($)	22.4	-41%	16%	24%	-21%	17%	-10%	35%	-55%	21%	-19%	45%	4%	3%	-22%	-3%
TOTAL	France ($)	102.1	-4%	-5%	5%	-5%	5%	-23%	13%	1%	2%	1%	1%	-5%	-10%	7%	3%
Global			56%	10%	59%	0%	14%	-1%	-8%	20%	22%	9%	8%	10%	6%	-8%	0%
Big Five			3%	-16%	58%	11%	9%	3%	5%	2%	3%	4%	2%	6%	6%	-1%	3%
North America			6%	6%	7%	15%	13%	9%	4%	5%	7%	8%	4%	8%	10%	1%	4%
Europe			-7%	-23%	80%	3%	6%	1%	-3%	2%	3%	3%	3%	1%	2%	0%	0%
EM			110%	33%	69%	-11%	20%	-11%	-15%	36%	37%	13%	11%	7%	-16%	15%	15%

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	0%	-1%	0%	0%	50%	83%	9%	4%	4%	4%	4%	22%	66%	7%	5%
Apache Corp.	US ($)	16.1	-13%	-7%	38%	7%	7%	4%	2%	4%	4%	4%	4%	9%	5%	3%	4%
Cabot Oil & Gas	US ($)	9.4	0%	0%	0%	33%	50%	33%	0%	0%	10%	10%	10%	22%	41%	0%	6%
Canadian Natural	Canada (C$)	22.6	-	-	-	21%	33%	39%	-8%	1%	0%	0%	0%	31%	36%	-4%	-2%
Chesapeake Energy	US ($)	4.8	7%	1%	9%	9%	1%	0%	-50%	-100%	-	-	-	4%	0%	-100%	-100%
CNOOC Ltd	China (Rmb)	50.8	1%	15%	20%	-7%	24%	-2%	-42%	-53%	89%	17%	22%	9%	11%	-48%	-6%
Concho	US ($)	12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ConocoPhillips	US ($)	58.2	2%	13%	23%	0%	2%	5%	4%	3%	5%	5%	5%	8%	4%	3%	4%
Continental	US ($)	11.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crescent Point	Canada (C$)	5.6	-	-	-	3%	-7%	-9%	-29%	-46%	0%	0%	0%	-2%	-8%	-38%	-18%
Devon Energy	US ($)	16.5	-2%	0%	4%	20%	7%	10%	4%	4%	4%	4%	4%	8%	9%	4%	4%
Encana	Canada (US$)	5.6	-	-	-	0%	-16%	-58%	0%	0%	0%	0%	0%	-28%	-41%	0%	0%
EOG Resources	US ($)	42.2	24%	8%	3%	7%	9%	40%	35%	4%	4%	4%	4%	13%	23%	19%	10%
Hess Corp.	US ($)	16.2	0%	0%	0%	0%	75%	43%	0%	0%	0%	0%	0%	20%	58%	0%	0%
Lundin Petroleum	Sweden ($)	3.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marathon Oil	US ($)	11.1	0%	3%	-39%	13%	6%	11%	5%	4%	4%	4%	4%	-4%	8%	4%	4%
Murphy Oil	US ($)	4.9	14%	5%	5%	235%	-66%	6%	6%	5%	-1%	4%	4%	6%	-40%	6%	4%
Noble Energy	US ($)	13.2	9%	0%	11%	14%	20%	24%	5%	3%	12%	12%	12%	14%	22%	4%	9%
Occidental Petroleum	US ($)	53.2	14%	9%	24%	49%	-27%	47%	4%	14%	14%	11%	9%	17%	4%	9%	10%
Oil & Natural Gas	India (INR)	28.9	-21%	16%	7%	-3%	-11%	-7%	-4%	23%	11%	2%	-6%	0%	-9%	8%	5%
Pioneer Natural Res.	US ($)	17.7	-71%	1%	-2%	0%	-50%	107%	-4%	0%	0%	0%	0%	0%	2%	-2%	-1%
PTT E&P (F)	Thailand (Bt)	8.1	38%	-38%	51%	6%	6%	-2%	-60%	-20%	41%	0%	21%	0%	2%	-44%	-11%
Range Resources	US ($)	6.2	0%	1%	1%	-2%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Southwestern Energy	US ($)	5.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tullow	UK ($)	2.8	-14%	-4%	112%	57%	-2%	-63%	-100%	-	-	-	-	3%	-40%	-100%	-100%
Woodside Petroleum	Australia (A$)	17.4	-6%	11%	5%	18%	92%	2%	-60%	-32%	70%	26%	3%	22%	40%	-48%	-10%
North America			4%	6%	14%	22%	12%	20%	4%	-8%	6%	5%	5%	9%	12%	0%	1%
International			-6%	10%	21%	0%	20%	4%	-31%	-13%	55%	12%	12%	9%	14%	-27%	6%
Global			0%	7%	17%	13%	14%	15%	-157%	-19%	36%	8%	8%	9%	13%	-8%	2%

Payout ratio (DPS/Adj EPS)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	19%	18%	17%	20%	22%	24%	76%	61%	34%	32%	31%	20%	23%	68%	47%
BP	UK ($)	94.0	73%	6%	25%	36%	52%	59%	110%	112%	82%	75%	70%	36%	55%	111%	90%
Cenovus	Canada (C$)	11.3	-	-	49%	77%	63%	127%	1243%	-	110%	75%	66%	79%	95%	1243%	373%
Chevron Corp.	US ($)	144.3	55%	30%	23%	29%	35%	45%	165%	167%	93%	82%	74%	33%	40%	166%	116%
Eni	Italy (€)	58.0	70%	53%	54%	55%	90%	110%	235%	159%	76%	63%	54%	72%	100%	197%	117%
ExxonMobil	US ($)	302.1	42%	28%	22%	26%	33%	39%	76%	86%	70%	73%	72%	30%	36%	81%	76%
GALP	Portugal (€)	8.3	78%	54%	66%	55%	77%	77%	63%	97%	83%	67%	62%	66%	77%	80%	74%
Gazprom	Russia ($)	49.6	7%	9%	16%	12%	15%	60%	18%	25%	25%	25%	25%	23%	37%	21%	24%
Gazprom Neft	Russia ($)	11.0	18%	24%	20%	24%	24%	15%	25%	25%	25%	25%	25%	21%	20%	25%	25%
Husky Energy	Canada (C$)	16.3	-	-	22%	29%	58%	58%	n/m	360%	133%	135%	108%	42%	58%	360%	184%
Imperial Oil	Canada (C$)	27.9	-	-	11%	11%	14%	12%	32%	26%	18%	20%	18%	12%	13%	29%	23%
Lukoil	Russia ($)	27.4	20%	18%	20%	20%	34%	46%	63%	40%	27%	27%	27%	27%	40%	51%	37%
MOL	Hungary (HUF)	4.8	0%	0%	21%	23%	45%	33%	23%	32%	35%	32%	31%	25%	39%	27%	30%
Novatek	Russia ($)	28.2	34%	30%	15%	30%	22%	61%	30%	30%	30%	30%	30%	32%	42%	30%	30%
OMV	Austria (€)	8.1	50%	27%	32%	25%	37%	36%	45%	66%	44%	40%	35%	31%	36%	55%	46%
Petrobras (PN)	Brazil (BrR)	31.6	28%	27%	32%	59%	53%	0%	260%	114%	42%	30%	29%	34%	27%	187%	95%
PetroChina	China (Rmb)	238.2	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%
PTT Public Company	Thailand (Bt)	20.7	43%	38%	40%	37%	38%	50%	45%	45%	43%	50%	51%	40%	44%	45%	47%
Reliance Industries	India (INR)	36.9	13%	9%	11%	12%	13%	12%	12%	13%	14%	14%	13%	11%	13%	13%	13%
Repsol	Spain (€)	18.4	84%	63%	77%	59%	71%	161%	86%	114%	72%	67%	65%	86%	116%	100%	81%
Rosneft	Russia ($)	38.9	11%	8%	20%	22%	25%	17%	25%	25%	25%	25%	25%	18%	21%	25%	25%
Royal Dutch Shell	UK (p)	156.1	89%	57%	42%	43%	58%	53%	89%	85%	64%	59%	54%	51%	55%	87%	70%
Sasol	S.Africa (Rd)	18.8	33%	40%	38%	41%	36%	36%	36%	36%	36%	36%	30%	38%	36%	36%	35%
Sinopec	China (Rmb)	89.5	19%	20%	29%	33%	48%	48%	48%	48%	48%	48%	48%	35%	48%	48%	48%
Statoil	Norway (Nkr)	46.3	49%	47%	42%	39%	47%	59%	118%	95%	56%	51%	48%	47%	53%	107%	74%
Suncor Energy	Canada (C$)	38.2	-	-	12%	16%	23%	32%	119%	87%	73%	87%	71%	21%	28%	103%	87%
Surgutneftegaz	Russia ($)	22.4	18%	17%	11%	14%	10%	3%	12%	13%	13%	13%	12%	11%	7%	13%	13%
TOTAL	France ($)	102.1	63%	50%	45%	43%	50%	43%	71%	91%	66%	58%	55%	46%	47%	81%	68%
Global			45%	31%	30%	34%	41%	47%	90%	82%	59%	56%	53%	37%	44%	86%	68%
Big Five			60%	34%	29%	33%	43%	46%	98%	104%	74%	70%	67%	37%	44%	101%	83%
North America			46%	29%	22%	27%	34%	42%	127%	113%	77%	76%	71%	31%	38%	120%	93%
Europe			68%	40%	40%	41%	55%	61%	104%	98%	65%	59%	54%	47%	58%	101%	76%
EM			28%	27%	29%	34%	35%	36%	49%	41%	37%	37%	36%	32%	36%	45%	40%

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	-32%	20%	11%	10%	14%	24%	-45%	-81%	>100%	53%	39%	**16%**	**19%**	**-63%**	**-8%**
Apache Corp.	US ($)	16.1	11%	7%	7%	9%	11%	16%	-84%	n/m	64%	48%	33%	**10%**	**14%**	**-84%**	**15%**
Cabot Oil & Gas	US ($)	9.4	7%	12%	9%	12%	9%	8%	41%	20%	6%	4%	4%	**10%**	**8%**	**30%**	**15%**
Canadian Natural	Canada (C$)	22.6	-	-	14%	23%	28%	24%	n/m	>100%	49%	36%	26%	**22%**	**26%**	**-**	**37%**
Chesapeake Energy	US ($)	4.8	11%	10%	12%	58%	24%	25%	-89%	0%	0%	0%	0%	**26%**	**24%**	**-44%**	**-18%**
CNOOC Ltd	China (Rmb)	50.8	59%	38%	34%	33%	45%	42%	69%	35%	35%	35%	35%	**38%**	**44%**	**52%**	**42%**
Concho	US ($)	12.6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**	**0%**
ConocoPhillips	US ($)	58.2	52%	36%	30%	48%	47%	53%	n/m	n/m	>100%	>100%	>100%	**43%**	**50%**	**-**	**-**
Continental	US ($)	11.5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**	**0%**
Crescent Point	Canada (C$)	5.6	-	-	>100%	>100%	76%	>100%	>100%	n/m	>100%	>100%	>100%	**76%**	**76%**	**-**	**-**
Devon Energy	US ($)	16.5	17%	11%	11%	25%	20%	19%	50%	n/m	60%	35%	27%	**17%**	**20%**	**50%**	**43%**
Encana	Canada (US$)	5.6	-	-	>100%	-21%	>100%	6%	n/m	>100%	41%	22%	14%	**8%**	**6%**	**-**	**26%**
EOG Resources	US ($)	42.2	19%	52%	17%	12%	9%	10%	n/m	n/m	48%	30%	22%	**20%**	**10%**	**-**	**33%**
Hess Corp.	US ($)	16.2	17%	8%	7%	7%	12%	23%	-27%	-28%	-76%	n/m	>100%	**11%**	**18%**	**-27%**	**-43%**
Lundin Petroleum	Sweden ($)	3.9	-	-	-	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**	**0%**
Marathon Oil	US ($)	11.1	59%	27%	18%	28%	27%	43%	-45%	-49%	n/m	>100%	>100%	**29%**	**35%**	**-47%**	**-47%**
Murphy Oil	US ($)	4.9	28%	25%	18%	65%	27%	39%	-31%	-50%	-90%	n/m	n/m	**35%**	**33%**	**-40%**	**-57%**
Noble Energy	US ($)	13.2	22%	17%	15%	18%	19%	28%	>100%	n/m	>100%	75%	47%	**20%**	**24%**	**-**	**61%**
Occidental Petroleum	US ($)	53.2	35%	25%	21%	37%	28%	48%	>100%	>100%	>100%	>100%	>100%	**32%**	**38%**	**-**	**-**
Oil & Natural Gas	India (INR)	28.9	34%	31%	38%	34%	33%	31%	44%	35%	35%	35%	35%	**33%**	**32%**	**40%**	**37%**
Pioneer Natural Res.	US ($)	17.7	-59%	5%	2%	2%	1%	2%	-78%	-16%	16%	3%	1%	**2%**	**1%**	**-47%**	**-15%**
PTT E&P (F)	Thailand (Bt)	8.1	87%	31%	36%	36%	37%	46%	44%	38%	36%	34%	39%	**37%**	**41%**	**41%**	**38%**
Range Resources	US ($)	6.2	15%	32%	15%	17%	11%	10%	>100%	-23%	29%	9%	6%	**17%**	**11%**	**-23%**	**5%**
Southwestern Energy	US ($)	5.9	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**	**0%**
Tullow	UK ($)	2.8	>100%	>100%	27%	>100%	>100%	-9%	0%	0%	0%	0%	0%	**9%**	**-9%**	**0%**	**0%**
Woodside Petroleum	Australia (A$)	17.4	67%	57%	53%	52%	>100%	87%	80%	80%	80%	78%	78%	**62%**	**87%**	**80%**	**79%**
North America			**24%**	**22%**	**16%**	**24%**	**23%**	**27%**	**-29%**	**-32%**	**22%**	**30%**	**21%**	**22%**	**25%**	**-30%**	**3%**
International			**56%**	**39%**	**37%**	**35%**	**38%**	**43%**	**56%**	**40%**	**40%**	**40%**	**40%**	**39%**	**41%**	**48%**	**43%**
Global			**33%**	**27%**	**22%**	**27%**	**26%**	**30%**	**10%**	**1%**	**29%**	**33%**	**27%**	**27%**	**28%**	**5%**	**20%**

Payout ratio (DPS/Adj CEPS)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	12%	10%	11%	12%	13%	14%	22%	21%	17%	17%	18%	**12%**	**14%**	**21%**	**19%**
BP	UK ($)	94.0	33%	3%	15%	18%	24%	24%	23%	37%	33%	31%	29%	**17%**	**24%**	**30%**	**31%**
Cenovus	Canada (C$)	11.3	-	-	18%	18%	20%	23%	31%	35%	20%	18%	17%	**0%**	**0%**	**0%**	**0%**
Chevron Corp.	US ($)	144.3	25%	18%	16%	18%	21%	25%	41%	32%	28%	27%	26%	**20%**	**23%**	**37%**	**31%**
Eni	Italy (€)	58.0	32%	25%	26%	32%	36%	27%	21%	22%	19%	18%	17%	**29%**	**32%**	**22%**	**19%**
ExxonMobil	US ($)	302.1	27%	19%	16%	18%	22%	23%	37%	40%	36%	38%	37%	**20%**	**22%**	**38%**	**37%**
GALP	Portugal (€)	8.3	33%	28%	50%	68%	30%	32%	23%	37%	30%	25%	24%	**42%**	**31%**	**30%**	**28%**
Gazprom	Russia ($)	49.6	5%	7%	12%	10%	9%	9%	10%	20%	20%	19%	19%	**10%**	**9%**	**15%**	**18%**
Gazprom Neft	Russia ($)	11.0	16%	14%	18%	18%	15%	7%	13%	22%	23%	22%	21%	**14%**	**11%**	**18%**	**20%**
Husky Energy	Canada (C$)	16.3	-	-	10%	13%	25%	25%	35%	30%	25%	24%	23%	**19%**	**25%**	**33%**	**27%**
Imperial Oil	Canada (C$)	27.9	-	-	9%	8%	10%	8%	16%	13%	11%	12%	11%	**9%**	**9%**	**14%**	**12%**
Lukoil	Russia ($)	27.4	16%	12%	13%	12%	15%	14%	15%	16%	14%	13%	13%	**13%**	**14%**	**16%**	**14%**
MOL	Hungary (HUF)	4.8	0%	0%	9%	9%	11%	13%	10%	10%	12%	12%	12%	**8%**	**12%**	**10%**	**11%**
Novatek	Russia ($)	28.2	23%	27%	25%	29%	27%	27%	28%	29%	29%	38%	47%	**27%**	**27%**	**29%**	**34%**
OMV	Austria (€)	8.1	14%	9%	9%	8%	12%	10%	12%	14%	12%	11%	11%	**10%**	**11%**	**13%**	**12%**
Petrobras (PN)	Brazil (BrR)	31.6	19%	23%	21%	29%	24%	0%	30%	25%	16%	13%	14%	**19%**	**12%**	**27%**	**20%**
PetroChina	China (Rmb)	238.2	24%	25%	22%	19%	20%	17%	10%	9%	14%	17%	18%	**21%**	**18%**	**10%**	**14%**
PTT Public Company	Thailand (Bt)	20.7	24%	23%	26%	22%	21%	21%	20%	21%	20%	21%	20%	**23%**	**21%**	**20%**	**20%**
Reliance Industries	India (INR)	36.9	9%	6%	7%	8%	9%	8%	8%	9%	9%	9%	9%	**7%**	**9%**	**9%**	**9%**
Repsol	Spain (€)	18.4	20%	15%	26%	25%	43%	82%	30%	32%	27%	26%	26%	**38%**	**62%**	**31%**	**28%**
Rosneft	Russia ($)	38.9	7%	6%	16%	15%	11%	4%	6%	8%	13%	14%	18%	**10%**	**7%**	**7%**	**12%**
Royal Dutch Shell	UK (p)	156.1	19%	31%	24%	25%	30%	30%	39%	36%	31%	30%	28%	**28%**	**30%**	**38%**	**33%**
Sasol	S.Africa (Rd)	18.8	28%	28%	29%	29%	24%	25%	19%	17%	23%	25%	22%	**27%**	**24%**	**18%**	**21%**
Sinopec	China (Rmb)	89.5	10%	11%	15%	16%	20%	18%	14%	15%	19%	20%	21%	**16%**	**19%**	**15%**	**18%**
Statoil	Norway (Nkr)	46.3	18%	15%	17%	14%	24%	24%	22%	20%	17%	16%	16%	**19%**	**24%**	**21%**	**18%**
Suncor Energy	Canada (C$)	38.2	-	-	7%	8%	12%	16%	25%	23%	22%	25%	24%	**11%**	**14%**	**24%**	**24%**
Surgutneftegaz	Russia ($)	22.4	9%	9%	9%	7%	8%	11%	18%	6%	7%	5%	8%	**9%**	**9%**	**12%**	**9%**
TOTAL	France ($)	102.1	31%	26%	24%	24%	27%	35%	31%	33%	28%	26%	25%	**27%**	**31%**	**32%**	**28%**
Global			**21%**	**18%**	**18%**	**19%**	**21%**	**22%**	**25%**	**26%**	**24%**	**24%**	**24%**	**20%**	**21%**	**25%**	**25%**
Big Five			**27%**	**20%**	**18%**	**20%**	**24%**	**27%**	**35%**	**37%**	**32%**	**32%**	**31%**	**22%**	**25%**	**36%**	**33%**
North America			**26%**	**19%**	**14%**	**16%**	**20%**	**22%**	**35%**	**34%**	**31%**	**31%**	**31%**	**18%**	**21%**	**35%**	**32%**
Europe			**25%**	**19%**	**21%**	**22%**	**27%**	**29%**	**29%**	**31%**	**26%**	**25%**	**24%**	**24%**	**28%**	**30%**	**27%**
EM			**16%**	**17%**	**18%**	**18%**	**17%**	**13%**	**13%**	**14%**	**16%**	**17%**	**19%**	**17%**	**15%**	**13%**	**16%**

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	5%	3%	3%	3%	4%	6%	12%	13%	10%	9%	8%	**4%**	**5%**	**13%**	**10%**
Apache Corp.	US ($)	16.1	5%	3%	3%	4%	4%	5%	14%	13%	10%	9%	8%	**4%**	**5%**	**13%**	**11%**
Cabot Oil & Gas	US ($)	9.4	2%	2%	2%	2%	2%	3%	4%	3%	2%	2%	2%	**2%**	**2%**	**4%**	**3%**
Canadian Natural	Canada (C$)	22.6	-	-	6%	8%	9%	10%	20%	17%	13%	11%	9%	**8%**	**10%**	**18%**	**14%**
Chesapeake Energy	US ($)	4.8	5%	5%	6%	12%	7%	7%	9%	0%	0%	0%	0%	**7%**	**7%**	**4%**	**2%**
CNOOC Ltd	China (Rmb)	50.8	38%	25%	24%	22%	23%	21%	15%	7%	12%	13%	14%	**23%**	**22%**	**11%**	**12%**
Concho	US ($)	12.6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**	**0%**
ConocoPhillips	US ($)	58.2	22%	21%	18%	24%	23%	21%	48%	42%	32%	29%	28%	**21%**	**22%**	**45%**	**36%**
Continental	US ($)	11.5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**	**0%**
Crescent Point	Canada (C$)	5.6	-	-	24%	22%	21%	35%	44%	33%	30%	28%	24%	**26%**	**28%**	**38%**	**32%**
Devon Energy	US ($)	16.5	7%	5%	5%	7%	7%	7%	10%	18%	11%	9%	8%	**6%**	**7%**	**14%**	**11%**
Encana	Canada (US$)	5.6	-	-	14%	17%	20%	8%	16%	17%	11%	8%	6%	**15%**	**14%**	**17%**	**12%**
EOG Resources	US ($)	42.2	5%	5%	4%	3%	3%	3%	10%	10%	7%	6%	6%	**4%**	**3%**	**10%**	**8%**
Hess Corp.	US ($)	16.2	4%	3%	3%	3%	4%	6%	12%	10%	7%	6%	5%	**4%**	**5%**	**11%**	**8%**
Lundin Petroleum	Sweden ($)	3.9	-	-	-	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**	**0%**
Marathon Oil	US ($)	11.1	15%	14%	7%	11%	9%	11%	33%	27%	18%	15%	12%	**10%**	**10%**	**30%**	**21%**
Murphy Oil	US ($)	4.9	10%	9%	7%	23%	7%	8%	22%	19%	14%	14%	14%	**11%**	**7%**	**21%**	**17%**
Noble Energy	US ($)	13.2	8%	7%	6%	6%	6%	8%	13%	14%	12%	11%	10%	**7%**	**7%**	**14%**	**12%**
Occidental Petroleum	US ($)	53.2	16%	14%	12%	18%	13%	22%	52%	49%	38%	37%	35%	**16%**	**18%**	**50%**	**42%**
Oil & Natural Gas	India (INR)	28.9	20%	18%	20%	18%	22%	19%	22%	21%	21%	21%	20%	**19%**	**20%**	**22%**	**21%**
Pioneer Natural Res.	US ($)	17.7	1%	1%	1%	1%	0%	1%	1%	1%	1%	0%	0%	**1%**	**0%**	**1%**	**1%**
PTT E&P (F)	Thailand (Bt)	8.1	38%	15%	22%	20%	22%	18%	8%	6%	8%	9%	10%	**19%**	**20%**	**7%**	**8%**
Range Resources	US ($)	6.2	4%	5%	4%	3%	3%	3%	4%	5%	2%	2%	1%	**3%**	**3%**	**4%**	**3%**
Southwestern Energy	US ($)	5.9	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**	**0%**
Tullow	UK ($)	2.8	23%	13%	13%	15%	10%	3%	0%	0%	0%	0%	0%	**11%**	**7%**	**0%**	**0%**
Woodside Petroleum	Australia (A$)	17.4	38%	37%	38%	33%	70%	54%	34%	28%	38%	41%	42%	**47%**	**62%**	**31%**	**37%**
North America			**11%**	**10%**	**9%**	**11%**	**9%**	**10%**	**23%**	**21%**	**16%**	**15%**	**14%**	**10%**	**10%**	**22%**	**18%**
International			**32%**	**23%**	**24%**	**21%**	**28%**	**24%**	**19%**	**14%**	**17%**	**18%**	**19%**	**24%**	**26%**	**16%**	**17%**
Global			**17%**	**14%**	**13%**	**14%**	**14%**	**14%**	**22%**	**20%**	**16%**	**16%**	**15%**	**14%**	**14%**	**21%**	**18%**

ROACE

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	15.2%	14.1%	11.9%	10.3%	9.8%	9.7%	3.0%	4.1%	8.6%	10.4%	11.9%	11.1%	9.7%	3.6%	7.6%
BP	UK ($)	94.0	12.7%	17.4%	16.9%	13.1%	9.7%	9.5%	6.1%	5.9%	8.2%	9.0%	9.7%	13.3%	9.6%	6.0%	7.8%
Cenovus	Canada (C$)	11.3	-	10.4%	13.5%	10.1%	7.1%	6.8%	-2.1%	0.3%	5.0%	6.4%	7.1%	9.6%	7.0%	-0.9%	3.3%
Chevron Corp.	US ($)	144.3	9.5%	16.8%	20.8%	16.6%	13.0%	9.8%	2.6%	2.9%	5.3%	6.2%	7.1%	15.4%	11.4%	2.7%	4.8%
Eni	Italy (€)	58.0	9.5%	10.9%	10.3%	10.0%	6.2%	5.7%	1.9%	3.3%	6.3%	7.6%	8.8%	8.6%	5.9%	2.6%	5.6%
ExxonMobil	US ($)	302.1	18.6%	22.8%	25.7%	22.6%	17.1%	14.6%	7.8%	7.2%	9.2%	9.5%	9.7%	20.6%	15.9%	7.5%	8.7%
GALP	Portugal (€)	8.3	6.6%	7.7%	5.9%	6.1%	5.4%	5.9%	7.6%	6.8%	8.5%	10.5%	13.2%	6.2%	5.7%	7.2%	9.3%
Gazprom	Russia ($)	49.6	11.3%	14.3%	17.9%	13.4%	11.6%	3.1%	8.2%	10.4%	11.2%	11.2%	10.5%	12.1%	7.4%	9.3%	10.3%
Gazprom Neft	Russia ($)	11.0	19.3%	18.9%	23.9%	20.9%	16.0%	11.7%	11.6%	13.5%	18.4%	18.6%	16.2%	18.3%	13.8%	12.5%	15.7%
Husky Energy	Canada (C$)	16.3	10.0%	6.9%	11.5%	9.3%	8.1%	5.6%	0.9%	1.9%	4.3%	4.2%	5.0%	8.3%	6.9%	1.4%	3.2%
Imperial Oil	Canada (C$)	27.9	16.2%	17.1%	22.7%	21.4%	12.5%	14.4%	5.2%	6.9%	10.0%	9.8%	10.9%	17.6%	13.5%	6.0%	8.6%
Lukoil	Russia ($)	27.4	12.1%	14.3%	14.3%	14.1%	9.4%	5.5%	3.7%	5.1%	8.1%	7.9%	8.3%	11.5%	7.5%	4.4%	6.6%
MOL	Hungary (HUF)	4.8	3.8%	9.1%	9.2%	7.7%	4.9%	4.9%	8.9%	7.0%	7.8%	9.1%	8.9%	7.2%	4.9%	8.0%	8.3%
Novatek	Russia ($)	28.2	17.7%	21.1%	46.4%	20.1%	24.2%	10.3%	22.2%	26.1%	28.9%	32.9%	27.9%	24.4%	17.3%	24.1%	27.6%
OMV	Austria (€)	8.1	4.6%	7.5%	6.0%	8.2%	5.7%	5.5%	4.2%	2.7%	3.9%	4.2%	4.6%	6.6%	5.6%	3.5%	3.9%
Petrobras (PN)	Brazil (BrR)	31.6	15.4%	12.1%	8.9%	5.0%	4.0%	-4.3%	-0.5%	0.4%	3.2%	4.9%	5.6%	5.2%	-0.1%	-0.1%	2.7%
PetroChina	China (Rmb)	238.2	11.0%	13.7%	12.0%	9.8%	9.4%	7.7%	4.0%	3.9%	6.1%	7.4%	8.4%	10.5%	8.6%	3.9%	5.9%
PTT Public Company	Thailand (Bt)	20.7	16.7%	18.3%	21.5%	18.5%	16.8%	11.5%	6.8%	6.9%	7.6%	7.3%	7.4%	17.3%	14.1%	6.9%	7.2%
Reliance Industries	India (INR)	36.9	11.4%	14.3%	11.8%	11.4%	13.0%	12.2%	10.4%	10.0%	10.4%	11.9%	14.8%	12.5%	12.6%	10.2%	11.5%
Repsol	Spain (€)	18.4	5.4%	7.3%	6.4%	6.1%	6.5%	6.0%	5.4%	4.1%	5.7%	6.0%	6.1%	6.5%	6.3%	4.7%	5.5%
Rosneft	Russia ($)	38.9	10.0%	15.1%	15.4%	11.8%	13.3%	8.6%	6.6%	7.6%	11.2%	11.5%	12.8%	12.8%	10.9%	7.1%	9.9%
Royal Dutch Shell	UK (p)	156.1	7.7%	10.5%	13.1%	12.4%	9.2%	10.9%	6.7%	6.7%	8.6%	9.1%	9.7%	11.2%	10.0%	6.7%	8.2%
Sasol	S.Africa (Rd)	18.8	31.3%	26.1%	29.4%	32.7%	33.7%	33.6%	21.6%	8.6%	13.6%	15.3%	18.1%	31.1%	33.6%	15.1%	15.4%
Sinopec	China (Rmb)	89.5	10.6%	11.7%	10.3%	7.9%	6.9%	4.9%	4.4%	5.5%	7.5%	8.7%	9.8%	8.3%	5.9%	4.9%	7.2%
Statoil	Norway (Nkr)	46.3	15.2%	15.2%	14.9%	15.9%	12.3%	9.0%	4.4%	5.1%	7.9%	8.6%	9.0%	13.5%	10.7%	4.8%	7.0%
Suncor Energy	Canada (C$)	38.2	4.7%	6.7%	11.6%	7.5%	11.0%	8.3%	3.7%	4.5%	7.0%	6.8%	9.1%	9.0%	9.7%	4.1%	6.2%
Surgutneftegaz	Russia ($)	22.4	24.3%	16.4%	31.0%	16.1%	25.9%	94.0%	44.4%	11.0%	12.8%	8.2%	14.0%	36.7%	59.9%	27.7%	18.1%
TOTAL	France ($)	102.1	12.1%	14.1%	15.1%	14.1%	12.9%	11.3%	9.1%	6.6%	6.9%	8.2%	8.7%	13.5%	12.1%	7.8%	7.9%
Global			**12.8%**	**15.0%**	**16.6%**	**14.1%**	**12.0%**	**10.5%**	**6.6%**	**6.1%**	**8.2%**	**9.0%**	**9.7%**	**13.6%**	**11.2%**	**6.3%**	**7.9%**
Big Five			**13.4%**	**17.4%**	**19.9%**	**17.3%**	**13.3%**	**11.9%**	**6.6%**	**6.1%**	**8.0%**	**8.6%**	**9.1%**	**15.9%**	**12.6%**	**6.4%**	**7.7%**
North America			**15.1%**	**18.5%**	**22.2%**	**19.0%**	**14.6%**	**12.3%**	**5.6%**	**5.6%**	**7.8%**	**8.2%**	**8.8%**	**17.3%**	**13.4%**	**5.6%**	**7.2%**
Europe			**10.9%**	**13.0%**	**13.2%**	**12.3%**	**9.6%**	**9.5%**	**6.0%**	**5.7%**	**7.7%**	**8.7%**	**9.4%**	**11.5%**	**9.6%**	**5.8%**	**7.5%**
EM			**12.9%**	**14.2%**	**15.3%**	**11.7%**	**11.7%**	**9.8%**	**8.0%**	**6.8%**	**9.0%**	**10.0%**	**10.8%**	**12.5%**	**10.7%**	**7.4%**	**8.9%**

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	0.5%	4.5%	8.6%	8.6%	8.8%	10.3%	-2.8%	-1.3%	4.1%	6.7%	8.7%	**8.2%**	**9.6%**	**-2.0%**	**3.1%**
Apache Corp.	US ($)	16.1	11.6%	15.9%	17.6%	11.9%	9.8%	8.4%	-1.3%	0.6%	5.0%	6.1%	7.9%	**12.7%**	**9.1%**	**-0.4%**	**3.7%**
Cabot Oil & Gas	US ($)	9.4	12.9%	7.1%	8.6%	8.4%	16.0%	18.6%	3.9%	7.1%	20.9%	25.9%	28.5%	**11.8%**	**17.3%**	**5.5%**	**17.2%**
Canadian Natural	Canada (C$)	22.6	-	-	9.9%	6.6%	7.1%	10.0%	-1.1%	1.2%	5.2%	6.9%	9.1%	**6.7%**	**8.5%**	**0.0%**	**4.3%**
Chesapeake Energy	US ($)	4.8	7.1%	9.6%	8.7%	-2.3%	1.7%	1.1%	-8.7%	-8.4%	-3.7%	-1.2%	-0.1%	**3.7%**	**1.4%**	**-8.5%**	**-4.4%**
CNOOC Ltd	China (Rmb)	50.8	21.5%	31.1%	30.3%	23.1%	15.6%	13.4%	4.5%	4.2%	8.4%	9.9%	11.9%	**22.7%**	**14.5%**	**4.4%**	**7.8%**
Concho	US ($)	12.6	11.1%	13.6%	16.3%	12.3%	10.3%	10.2%	2.9%	2.3%	2.8%	4.9%	6.9%	**12.5%**	**10.3%**	**2.6%**	**4.0%**
ConocoPhillips	US ($)	58.2	9.2%	13.4%	17.9%	14.5%	14.2%	12.8%	-1.4%	0.4%	5.1%	7.1%	8.0%	**14.6%**	**13.5%**	**-0.5%**	**3.8%**
Continental	US ($)	11.5	14.4%	25.9%	28.3%	20.0%	22.2%	22.5%	-0.4%	2.1%	8.0%	11.3%	14.3%	**23.7%**	**22.3%**	**0.9%**	**7.1%**
Crescent Point	Canada (C$)	5.6	-	-	4.0%	2.5%	2.5%	5.9%	-1.3%	0.6%	1.5%	1.9%	3.7%	**3.3%**	**4.2%**	**-0.4%**	**1.3%**
Devon Energy	US ($)	16.5	10.6%	17.6%	15.7%	7.7%	10.1%	10.3%	4.7%	-0.3%	4.5%	7.0%	9.0%	**12.3%**	**10.2%**	**2.2%**	**5.0%**
Encana	Canada (US$)	5.6	-	-	1.5%	-26.7%	3.7%	23.8%	-28.6%	3.2%	8.2%	12.0%	15.2%	**0.6%**	**13.8%**	**-12.7%**	**2.0%**
EOG Resources	US ($)	42.2	10.7%	4.7%	10.7%	13.0%	17.2%	18.4%	0.3%	0.2%	6.4%	9.3%	12.2%	**12.8%**	**17.8%**	**0.3%**	**5.7%**
Hess Corp.	US ($)	16.2	5.7%	9.5%	9.5%	8.5%	7.4%	5.2%	-3.1%	-3.1%	-0.6%	0.3%	1.3%	**8.0%**	**6.3%**	**-3.1%**	**-1.1%**
Lundin Petroleum	Sweden ($)	3.9	-	-	-	-	3.8%	13.4%	-6.1%	3.9%	4.6%	4.2%	3.3%	**8.6%**	**8.6%**	**-1.1%**	**2.0%**
Marathon Oil	US ($)	11.1	4.1%	8.6%	8.9%	7.7%	7.9%	5.4%	-4.1%	-3.9%	-2.8%	0.4%	2.3%	**7.7%**	**6.6%**	**-4.0%**	**-1.6%**
Murphy Oil	US ($)	4.9	9.2%	9.3%	13.3%	11.1%	8.4%	6.4%	-6.0%	-3.5%	-1.4%	-1.1%	-0.7%	**9.7%**	**7.4%**	**-4.7%**	**-2.5%**
Noble Energy	US ($)	13.2	7.7%	9.2%	9.7%	8.5%	9.0%	6.9%	14.2%	-0.1%	2.1%	3.4%	4.8%	**8.7%**	**8.0%**	**7.1%**	**4.9%**
Occidental Petroleum	US ($)	53.2	10.3%	13.5%	17.0%	12.9%	11.6%	10.0%	0.5%	1.5%	5.1%	6.9%	9.0%	**13.0%**	**10.8%**	**1.0%**	**4.6%**
Oil & Natural Gas	India (INR)	28.9	42.9%	34.5%	35.2%	37.8%	24.5%	19.2%	12.0%	18.8%	18.5%	17.4%	15.2%	**30.2%**	**21.8%**	**15.4%**	**16.4%**
Pioneer Natural Res.	US ($)	17.7	-22.7%	5.2%	8.6%	7.2%	8.2%	7.9%	0.5%	0.5%	1.6%	4.0%	6.6%	**7.4%**	**8.0%**	**0.5%**	**2.6%**
PTT E&P (F)	Thailand (Bt)	8.1	13.8%	20.1%	18.3%	15.6%	15.3%	10.6%	5.3%	4.8%	6.0%	6.2%	6.5%	**16.0%**	**12.9%**	**5.0%**	**5.8%**
Range Resources	US ($)	6.2	5.8%	3.9%	6.0%	5.5%	6.3%	6.0%	1.8%	-0.2%	2.9%	5.8%	8.3%	**5.6%**	**6.2%**	**0.8%**	**3.7%**
Southwestern Energy	US ($)	5.9	16.4%	16.7%	13.9%	10.2%	14.2%	13.1%	0.8%	0.4%	3.6%	6.3%	6.3%	**13.6%**	**13.7%**	**0.6%**	**3.5%**
Tullow	UK ($)	2.8	0.5%	0.7%	9.7%	0.1%	3.5%	-15.5%	0.7%	-0.2%	1.0%	1.6%	2.4%	**-0.3%**	**-6.0%**	**0.3%**	**1.1%**
Woodside Petroleum	Australia (A$)	17.4	16.0%	14.1%	14.6%	16.6%	14.1%	22.1%	8.4%	6.0%	10.2%	13.1%	14.5%	**16.3%**	**18.1%**	**7.2%**	**10.4%**
North America			**8.5%**	**11.9%**	**13.2%**	**9.3%**	**10.7%**	**11.1%**	**-0.4%**	**0.3%**	**4.5%**	**6.7%**	**8.7%**	**11.0%**	**10.9%**	**-0.1%**	**3.9%**
International			**24.3%**	**25.9%**	**26.5%**	**22.8%**	**16.0%**	**14.2%**	**7.6%**	**8.2%**	**10.8%**	**11.6%**	**12.2%**	**21.1%**	**15.1%**	**7.9%**	**10.1%**
Global			**13.3%**	**16.4%**	**17.1%**	**13.3%**	**12.1%**	**11.8%**	**1.7%**	**2.1%**	**6.0%**	**7.9%**	**9.5%**	**13.9%**	**12.0%**	**1.9%**	**5.4%**

ROAE

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	18.1%	18.1%	16.2%	13.8%	13.2%	13.7%	4.0%	5.6%	11.1%	12.6%	13.6%	15.0%	13.5%	4.8%	9.4%
BP	UK ($)	94.0	15.1%	24.4%	19.3%	14.7%	10.6%	7.3%	7.4%	6.1%	8.4%	9.4%	10.0%	15.3%	9.0%	6.8%	8.3%
Cenovus	Canada (C$)	11.3	-	10.9%	13.5%	10.1%	7.1%	6.8%	-2.1%	0.3%	5.0%	6.4%	7.1%	9.7%	7.0%	-0.9%	3.3%
Chevron Corp.	US ($)	144.3	10.5%	17.9%	21.7%	17.4%	14.4%	11.4%	3.2%	3.4%	6.5%	7.7%	8.9%	16.6%	12.9%	3.3%	5.9%
Eni	Italy (€)	58.0	10.6%	13.0%	12.1%	11.5%	7.2%	6.0%	2.0%	2.9%	6.4%	7.7%	8.7%	9.9%	6.6%	2.4%	5.5%
ExxonMobil	US ($)	302.1	17.1%	24.0%	27.3%	23.5%	18.5%	16.5%	8.8%	8.1%	10.5%	10.9%	11.1%	22.0%	17.5%	8.4%	9.9%
GALP	Portugal (€)	8.3	9.5%	12.2%	9.2%	8.5%	5.5%	6.7%	8.9%	7.7%	10.4%	13.7%	17.6%	8.4%	6.1%	8.3%	11.6%
Gazprom	Russia ($)	49.6	15.5%	16.7%	20.2%	15.0%	12.7%	3.2%	9.3%	12.0%	12.9%	12.7%	11.5%	13.5%	8.0%	10.6%	11.6%
Gazprom Neft	Russia ($)	11.0	30.0%	27.2%	35.8%	25.2%	19.7%	14.9%	15.9%	18.5%	24.4%	23.0%	18.6%	24.6%	17.3%	17.2%	20.1%
Husky Energy	Canada (C$)	16.3	10.2%	7.4%	13.3%	10.9%	9.3%	6.3%	-0.1%	1.7%	4.9%	4.7%	5.8%	9.5%	7.8%	0.8%	3.4%
Imperial Oil	Canada (C$)	27.9	17.6%	21.0%	27.5%	25.4%	15.9%	18.1%	6.3%	8.2%	11.8%	11.1%	11.9%	21.6%	17.0%	7.3%	9.9%
Lukoil	Russia ($)	27.4	13.2%	15.6%	16.3%	15.6%	10.3%	5.9%	3.8%	5.4%	8.8%	8.4%	8.7%	12.8%	8.1%	4.6%	7.0%
MOL	Hungary (HUF)	4.8	4.8%	13.1%	12.2%	10.5%	6.3%	6.0%	10.7%	8.5%	9.4%	10.9%	10.4%	9.6%	6.1%	9.6%	10.0%
Novatek	Russia ($)	28.2	23.2%	31.0%	63.9%	26.2%	32.9%	13.9%	30.0%	27.6%	27.3%	29.5%	21.2%	33.6%	23.4%	28.8%	27.1%
OMV	Austria (€)	8.1	5.9%	9.9%	7.9%	10.6%	7.6%	7.8%	6.1%	4.1%	5.9%	6.3%	6.7%	8.8%	7.7%	5.1%	5.8%
Petrobras (PN)	Brazil (BrR)	31.6	19.9%	14.9%	10.5%	6.3%	6.8%	-6.6%	1.6%	3.6%	9.3%	12.5%	13.7%	6.4%	0.1%	2.6%	8.1%
PetroChina	China (Rmb)	238.2	12.6%	15.7%	13.7%	11.2%	11.8%	9.3%	4.1%	3.9%	7.2%	9.1%	10.4%	12.3%	10.5%	4.0%	6.9%
PTT Public Company	Thailand (Bt)	20.7	13.3%	16.2%	19.8%	16.1%	15.2%	11.7%	10.0%	10.3%	11.0%	9.7%	9.0%	15.8%	13.4%	10.2%	10.0%
Reliance Industries	India (INR)	36.9	14.8%	18.7%	14.4%	12.7%	11.9%	11.8%	11.3%	11.0%	10.9%	11.1%	12.8%	13.9%	11.9%	11.2%	11.4%
Repsol	Spain (€)	18.4	7.2%	10.0%	8.2%	8.8%	8.1%	7.0%	7.1%	6.4%	8.8%	9.2%	9.3%	8.4%	7.6%	6.7%	8.2%
Rosneft	Russia ($)	38.9	15.6%	20.9%	20.7%	15.7%	20.0%	12.6%	11.2%	11.7%	16.6%	15.3%	15.7%	18.0%	16.3%	11.5%	14.1%
Royal Dutch Shell	UK (p)	156.1	8.7%	12.8%	15.0%	13.8%	10.9%	12.5%	7.7%	7.8%	10.1%	10.7%	11.3%	13.0%	11.7%	7.8%	9.5%
Sasol	S.Africa (Rd)	18.8	20.4%	17.8%	20.1%	21.9%	23.2%	22.9%	14.4%	6.5%	11.3%	12.8%	15.0%	21.2%	23.0%	10.4%	12.0%
Sinopec	China (Rmb)	89.5	17.8%	17.8%	15.8%	12.9%	11.3%	8.8%	6.1%	6.9%	9.5%	10.8%	10.9%	13.3%	10.1%	6.5%	8.9%
Statoil	Norway (Nkr)	46.3	19.6%	19.1%	17.5%	17.4%	13.4%	10.1%	5.4%	6.5%	10.6%	11.3%	11.5%	15.5%	11.7%	6.0%	9.0%
Suncor Energy	Canada (C$)	38.2	3.4%	7.4%	11.2%	7.1%	9.7%	6.5%	3.4%	4.8%	6.2%	5.9%	8.3%	8.4%	8.1%	4.1%	5.7%
Surgutneftegaz	Russia ($)	22.4	9.3%	10.2%	17.6%	10.0%	14.3%	39.9%	16.3%	6.2%	7.1%	5.7%	8.1%	18.4%	27.1%	11.2%	8.7%
TOTAL	France ($)	102.1	14.9%	17.2%	18.5%	16.7%	15.4%	14.0%	11.3%	7.9%	8.3%	10.0%	10.6%	16.4%	14.7%	9.6%	9.6%
Global			**14.5%**	**17.6%**	**18.7%**	**15.5%**	**13.6%**	**11.1%**	**7.2%**	**6.9%**	**9.5%**	**10.4%**	**11.0%**	**15.3%**	**12.4%**	**7.1%**	**9.0%**
Big Five			**14.0%**	**19.9%**	**21.7%**	**18.6%**	**14.8%**	**13.3%**	**7.7%**	**6.9%**	**9.2%**	**10.0%**	**10.5%**	**17.7%**	**14.1%**	**7.3%**	**8.9%**
North America			**14.4%**	**19.8%**	**23.6%**	**19.9%**	**15.9%**	**13.8%**	**6.3%**	**6.3%**	**8.9%**	**9.4%**	**10.1%**	**18.6%**	**14.8%**	**6.3%**	**8.2%**
Europe			**13.0%**	**16.7%**	**15.8%**	**14.2%**	**11.3%**	**10.7%**	**7.2%**	**6.6%**	**9.1%**	**10.2%**	**10.8%**	**13.7%**	**11.0%**	**6.9%**	**8.8%**
EM			**15.6%**	**16.9%**	**17.6%**	**13.1%**	**13.6%**	**8.9%**	**8.0%**	**7.7%**	**10.5%**	**11.5%**	**11.8%**	**14.0%**	**11.2%**	**7.9%**	**9.9%**

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	-3.0%	5.2%	12.4%	12.6%	12.3%	14.9%	-7.8%	-5.1%	5.2%	10.1%	13.5%	**11.5%**	**13.6%**	**-6.5%**	**3.2%**
Apache Corp.	US ($)	16.1	14.3%	21.0%	23.2%	15.9%	12.8%	11.0%	-2.8%	0.0%	7.7%	9.7%	12.8%	**16.8%**	**11.9%**	**-1.4%**	**5.5%**
Cabot Oil & Gas	US ($)	9.4	16.6%	8.3%	10.6%	10.5%	22.3%	29.0%	4.1%	11.2%	35.4%	37.2%	34.5%	**16.1%**	**25.6%**	**7.7%**	**24.5%**
Canadian Natural	Canada (C$)	22.6	-	-	12.1%	8.0%	9.1%	14.4%	-0.6%	1.0%	7.2%	9.1%	11.7%	**10.9%**	**11.7%**	**0.2%**	**5.7%**
Chesapeake Energy	US ($)	4.8	19.6%	27.7%	25.4%	5.4%	13.2%	12.4%	-1.3%	-12.4%	3.3%	11.5%	15.1%	**16.8%**	**12.8%**	**-6.9%**	**3.2%**
CNOOC Ltd	China (Rmb)	50.8	18.1%	28.4%	29.1%	22.1%	17.4%	17.1%	6.0%	5.6%	10.4%	11.3%	12.6%	**22.8%**	**17.3%**	**5.8%**	**9.2%**
Concho	US ($)	12.6	16.0%	20.7%	24.9%	18.7%	16.2%	15.4%	2.4%	1.4%	2.1%	5.8%	9.1%	**19.2%**	**15.8%**	**1.9%**	**4.2%**
ConocoPhillips	US ($)	58.2	8.8%	13.0%	18.6%	14.4%	13.6%	12.7%	-3.1%	-1.8%	4.6%	7.7%	9.5%	**14.5%**	**13.1%**	**-2.5%**	**3.4%**
Continental	US ($)	11.5	19.5%	39.6%	43.1%	34.1%	43.7%	45.5%	-4.9%	1.1%	15.9%	21.7%	25.2%	**41.2%**	**44.6%**	**-1.9%**	**11.8%**
Crescent Point	Canada (C$)	5.6	-	-	3.7%	3.0%	1.8%	5.5%	0.4%	-0.5%	0.4%	0.8%	2.7%	**3.5%**	**3.6%**	**-0.0%**	**0.8%**
Devon Energy	US ($)	16.5	12.8%	21.2%	18.5%	9.1%	12.8%	12.7%	5.4%	-2.3%	5.5%	9.4%	12.3%	**14.9%**	**12.7%**	**1.6%**	**6.0%**
Encana	Canada (US$)	5.6	-	-	0.0%	0.0%	9.2%	46.2%	-1.7%	0.6%	7.7%	13.8%	18.7%	**13.8%**	**27.7%**	**-0.5%**	**7.8%**
EOG Resources	US ($)	42.2	12.6%	5.8%	14.3%	17.4%	23.2%	24.2%	-0.7%	-0.6%	8.2%	12.2%	15.9%	**17.0%**	**23.7%**	**-0.7%**	**7.0%**
Hess Corp.	US ($)	16.2	5.5%	8.3%	9.2%	10.5%	20.4%	10.4%	-7.7%	-5.3%	-2.0%	-0.8%	0.6%	**11.7%**	**15.4%**	**-6.5%**	**-3.0%**
Lundin Petroleum	Sweden ($)	3.9	-	-	-	-	6.2%	42.7%	-82.3%	117.7%	64.7%	38.3%	24.0%	**24.4%**	**24.4%**	**17.7%**	**32.5%**
Marathon Oil	US ($)	11.1	6.5%	10.8%	10.0%	8.7%	9.8%	5.3%	-8.0%	-7.2%	-2.5%	-0.1%	2.6%	**8.9%**	**7.5%**	**-7.6%**	**-3.0%**
Murphy Oil	US ($)	4.9	10.1%	10.3%	13.8%	12.5%	10.1%	7.1%	-10.0%	-7.7%	-4.7%	-4.4%	-4.0%	**10.8%**	**8.6%**	**-8.8%**	**-6.1%**
Noble Energy	US ($)	13.2	9.4%	11.5%	13.4%	11.6%	12.1%	9.1%	0.7%	-1.4%	1.6%	4.5%	7.9%	**11.5%**	**10.6%**	**-0.4%**	**2.7%**
Occidental Petroleum	US ($)	53.2	10.9%	15.0%	19.5%	14.8%	13.4%	11.7%	0.5%	1.7%	7.2%	10.0%	13.4%	**14.9%**	**12.6%**	**1.1%**	**6.6%**
Oil & Natural Gas	India (INR)	28.9	23.2%	20.0%	20.7%	22.5%	16.8%	16.3%	10.4%	15.2%	14.9%	13.9%	11.9%	**0.2%**	**0.2%**	**0.1%**	**0.1%**
Pioneer Natural Res.	US ($)	17.7	-0.4%	6.0%	10.7%	8.8%	10.3%	9.1%	-0.2%	-0.9%	0.9%	5.1%	9.3%	**9.0%**	**9.7%**	**-0.5%**	**2.8%**
PTT E&P (F)	Thailand (Bt)	8.1	16.4%	25.5%	25.9%	21.5%	17.7%	13.0%	5.4%	4.9%	7.0%	7.1%	7.2%	**20.7%**	**15.4%**	**5.2%**	**6.3%**
Range Resources	US ($)	6.2	6.8%	3.5%	7.6%	6.5%	9.8%	8.9%	0.5%	-3.5%	2.8%	8.3%	11.9%	**7.3%**	**9.3%**	**-1.5%**	**4.0%**
Southwestern Energy	US ($)	5.9	21.5%	22.7%	18.4%	13.9%	21.2%	19.3%	1.1%	0.6%	6.3%	10.2%	9.5%	**19.1%**	**20.2%**	**0.9%**	**5.5%**
Tullow	UK ($)	2.8	0.7%	1.0%	14.9%	0.1%	4.3%	-23.4%	1.4%	-0.3%	2.5%	3.9%	6.2%	**-0.6%**	**-9.5%**	**0.5%**	**2.7%**
Woodside Petroleum	Australia (A$)	17.4	15.6%	15.3%	14.9%	15.6%	11.8%	16.4%	7.1%	4.9%	8.1%	10.3%	10.4%	**14.8%**	**14.1%**	**6.0%**	**8.1%**
North America			**8.9%**	**13.5%**	**16.3%**	**12.6%**	**14.6%**	**15.4%**	**-1.8%**	**-1.1%**	**5.9%**	**9.2%**	**12.0%**	**14.5%**	**15.0%**	**-1.5%**	**4.8%**
International			**11.2%**	**16.5%**	**18.1%**	**13.8%**	**11.5%**	**11.0%**	**1.1%**	**7.8%**	**8.8%**	**8.7%**	**8.9%**	**14.2%**	**11.3%**	**4.5%**	**7.1%**
Global			**9.5%**	**14.4%**	**16.8%**	**13.0%**	**13.7%**	**14.4%**	**-1.0%**	**1.0%**	**6.6%**	**9.1%**	**11.3%**	**14.5%**	**14.1%**	**-0.0%**	**5.4%**

Net debt/equity

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	22%	27%	39%	34%	35%	42%	33%	35%	29%	22%	14%	**35%**	**39%**	**34%**	**26%**
BP	UK ($)	94.0	26%	26%	27%	24%	19%	20%	21%	24%	22%	20%	16%	**23%**	**20%**	**22%**	**21%**
Cenovus	Canada (C$)	11.3	56%	52%	30%	35%	28%	43%	14%	22%	20%	18%	13%	**38%**	**35%**	**18%**	**17%**
Chevron Corp.	US ($)	144.3	2%	net cash	net cash	net cash	3%	9%	18%	22%	19%	15%	10%	**6%**	**6%**	**20%**	**17%**
Eni	Italy (€)	58.0	46%	46%	46%	26%	25%	23%	24%	23%	19%	13%	6%	**33%**	**24%**	**24%**	**17%**
ExxonMobil	US ($)	302.1	net cash	5%	3%	1%	10%	14%	19%	23%	22%	23%	23%	**6%**	**12%**	**21%**	**22%**
GALP	Portugal (€)	8.3	81%	105%	119%	25%	34%	39%	35%	35%	42%	44%	41%	**64%**	**37%**	**35%**	**39%**
Gazprom	Russia ($)	49.6	31%	21%	21%	18%	19%	27%	17%	16%	15%	12%	9%	**21%**	**23%**	**16%**	**14%**
Gazprom Neft	Russia ($)	11.0	51%	44%	33%	19%	23%	48%	39%	39%	28%	19%	10%	**34%**	**36%**	**39%**	**27%**
Husky Energy	Canada (C$)	16.3	17%	19%	8%	7%	12%	19%	33%	34%	37%	29%	33%	**13%**	**15%**	**33%**	**33%**
Imperial Oil	Canada (C$)	27.9	net cash	0%	8%	15%	37%	34%	36%	32%	25%	19%	13%	**19%**	**35%**	**34%**	**25%**
Lukoil	Russia ($)	27.4	16%	15%	9%	5%	12%	13%	12%	14%	12%	10%	8%	**11%**	**12%**	**13%**	**11%**
MOL	Hungary (HUF)	4.8	50%	46%	39%	33%	19%	24%	25%	24%	24%	22%	19%	**32%**	**22%**	**24%**	**23%**
Novatek	Russia ($)	28.2	24%	42%	0%	0%	0%	53%	35%	7%	net cash	net cash	net cash	**19%**	**27%**	**21%**	**21%**
OMV	Austria (€)	8.1	33%	46%	40%	31%	39%	43%	46%	49%	50%	48%	47%	**40%**	**41%**	**48%**	**48%**
Petrobras (PN)	Brazil (BrR)	31.6	42%	19%	31%	45%	66%	91%	122%	120%	112%	104%	94%	**50%**	**79%**	**121%**	**110%**
PetroChina	China (Rmb)	238.2	17%	20%	26%	38%	39%	40%	47%	49%	47%	44%	40%	**32%**	**39%**	**48%**	**46%**
PTT Public Company	Thailand (Bt)	20.7	50%	39%	44%	43%	40%	39%	50%	54%	57%	57%	55%	**41%**	**39%**	**52%**	**55%**
Reliance Industries	India (INR)	36.9	44%	36%	35%	15%	4%	24%	35%	45%	32%	23%	12%	**23%**	**14%**	**40%**	**29%**
Repsol	Spain (€)	18.4	68%	41%	56%	39%	15%	14%	52%	56%	56%	54%	52%	**33%**	**15%**	**54%**	**54%**
Rosneft	Russia ($)	38.9	48%	36%	28%	30%	82%	142%	112%	79%	56%	37%	20%	**63%**	**112%**	**96%**	**61%**
Royal Dutch Shell	UK (p)	156.1	18%	21%	15%	10%	19%	14%	15%	15%	17%	16%	14%	**16%**	**17%**	**15%**	**15%**
Sasol	S.Africa (Rd)	18.8	net cash	1%	0%	1%	net cash	net cash	2%	24%	30%	28%	22%	**1%**	**-**	**13%**	**21%**
Sinopec	China (Rmb)	89.5	49%	46%	44%	46%	50%	54%	29%	27%	26%	24%	23%	**48%**	**52%**	**28%**	**26%**
Statoil	Norway (Nkr)	46.3	36%	31%	25%	12%	16%	23%	37%	46%	45%	41%	35%	**22%**	**20%**	**41%**	**41%**
Suncor Energy	Canada (C$)	38.2	41%	33%	15%	13%	12%	16%	23%	24%	21%	17%	12%	**18%**	**14%**	**24%**	**20%**
Surgutneftegaz	Russia ($)	22.4	net cash	net cash	net cash	net cash	net cash	net cash	net cash	net cash	net cash	net cash	net cash	**-**	**-**	**-**	**-**
TOTAL	France ($)	102.1	27%	24%	26%	22%	24%	32%	28%	30%	30%	29%	28%	**26%**	**28%**	**29%**	**29%**
Global			**29%**	**24%**	**23%**	**21%**	**24%**	**30%**	**31%**	**32%**	**30%**	**27%**	**24%**	**24%**	**27%**	**31%**	**29%**
Big Five			**18%**	**16%**	**13%**	**10%**	**13%**	**16%**	**19%**	**22%**	**22%**	**21%**	**19%**	**13%**	**14%**	**21%**	**21%**
North America			**15%**	**11%**	**6%**	**5%**	**10%**	**14%**	**20%**	**23%**	**22%**	**20%**	**18%**	**9%**	**12%**	**22%**	**21%**
Europe			**30%**	**30%**	**30%**	**20%**	**22%**	**23%**	**25%**	**27%**	**26%**	**24%**	**20%**	**25%**	**23%**	**26%**	**24%**
EM			**32%**	**26%**	**26%**	**30%**	**40%**	**54%**	**45%**	**44%**	**42%**	**37%**	**32%**	**35%**	**47%**	**45%**	**40%**

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	51%	47%	69%	48%	49%	63%	89%	105%	109%	91%	87%	**55%**	**56%**	**97%**	**96%**
Apache Corp.	US ($)	16.1	17%	40%	29%	44%	23%	41%	62%	69%	69%	69%	66%	**35%**	**32%**	**65%**	**67%**
Cabot Oil & Gas	US ($)	9.4	46%	57%	45%	56%	53%	86%	94%	93%	62%	33%	13%	**59%**	**70%**	**93%**	**59%**
Canadian Natural	Canada (C$)	22.6	-	-	41%	41%	44%	52%	62%	63%	45%	41%	24%	**44%**	**48%**	**63%**	**47%**
Chesapeake Energy	US ($)	4.8	114%	185%	149%	157%	148%	104%	392%	540%	581%	556%	507%	**149%**	**126%**	**466%**	**515%**
CNOOC Ltd	China (Rmb)	50.8	net cash	net cash	net cash	net cash	27%	27%	37%	29%	18%	10%	2%	**27%**	**27%**	**33%**	**19%**
Concho	US ($)	12.6	72%	77%	80%	98%	103%	71%	61%	63%	65%	65%	62%	**86%**	**87%**	**62%**	**63%**
ConocoPhillips	US ($)	58.2	47%	22%	30%	30%	33%	36%	55%	71%	78%	85%	95%	**30%**	**35%**	**63%**	**77%**
Continental	US ($)	11.5	49%	87%	62%	117%	127%	132%	158%	158%	138%	114%	91%	**105%**	**130%**	**158%**	**132%**
Crescent Point	Canada (C$)	5.6	-	-	24%	21%	26%	34%	36%	40%	44%	48%	50%	**25%**	**30%**	**38%**	**44%**
Devon Energy	US ($)	16.5	43%	15%	16%	26%	32%	35%	52%	53%	52%	49%	44%	**25%**	**34%**	**53%**	**50%**
Encana	Canada (US$)	5.6	-	-	48%	99%	106%	82%	74%	80%	87%	68%	48%	**84%**	**94%**	**77%**	**71%**
EOG Resources	US ($)	42.2	23%	46%	34%	39%	30%	22%	32%	35%	32%	29%	23%	**34%**	**26%**	**34%**	**30%**
Hess Corp.	US ($)	16.2	23%	25%	31%	35%	14%	18%	15%	21%	22%	23%	20%	**25%**	**16%**	**18%**	**20%**
Lundin Petroleum	Sweden ($)	3.9	-	-	-	27%	93%	560%	6677%	1937%	992%	693%	583%	**227%**	**327%**	**4307%**	**2176%**
Marathon Oil	US ($)	11.1	29%	15%	24%	32%	32%	14%	33%	39%	41%	41%	38%	**23%**	**23%**	**36%**	**39%**
Murphy Oil	US ($)	4.9	2%	4%	net cash	17%	31%	28%	47%	67%	81%	95%	110%	**20%**	**29%**	**57%**	**80%**
Noble Energy	US ($)	13.2	22%	27%	54%	42%	47%	54%	61%	67%	78%	90%	102%	**45%**	**50%**	**64%**	**80%**
Occidental Petroleum	US ($)	53.2	2%	net cash	6%	12%	9%	3%	19%	39%	47%	49%	50%	**8%**	**6%**	**29%**	**41%**
Oil & Natural Gas	India (INR)	28.9	net cash	net cash	net cash	net cash	1%	12%	20%	16%	17%	18%	16%	**7%**	**7%**	**18%**	**17%**
Pioneer Natural Res.	US ($)	17.7	75%	51%	36%	63%	33%	22%	27%	43%	58%	65%	61%	**41%**	**27%**	**35%**	**51%**
PTT E&P (F)	Thailand (Bt)	8.1	0%	11%	40%	14%	14%	2%	net cash	1%	4%	net cash	net cash	**16%**	**8%**	**1%**	**3%**
Range Resources	US ($)	6.2	79%	96%	91%	128%	140%	94%	103%	111%	105%	88%	67%	**110%**	**117%**	**107%**	**95%**
Southwestern Energy	US ($)	5.9	41%	41%	31%	54%	55%	145%	149%	152%	138%	53%	46%	**65%**	**100%**	**150%**	**108%**
Tullow	UK ($)	2.8	22%	48%	58%	16%	33%	75%	113%	130%	145%	158%	162%	**46%**	**54%**	**122%**	**142%**
Woodside Petroleum	Australia (A$)	17.4	45%	38%	42%	13%	11%	net cash	26%	23%	15%	4%	net cash	**26%**	**11%**	**25%**	**17%**
North America			**32%**	**40%**	**38%**	**44%**	**43%**	**45%**	**59%**	**70%**	**72%**	**68%**	**65%**	42%	44%	64%	67%
International			**28%**	**33%**	**46%**	**15%**	**20%**	**43%**	**236%**	**93%**	**54%**	**41%**	**38%**	32%	32%	164%	92%
Global			**32%**	**39%**	**39%**	**40%**	**37%**	**45%**	**104%**	**75%**	**68%**	**62%**	**60%**	40%	41%	90%	74%

Net debt/(net debt and equity)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	18%	21%	28%	25%	26%	30%	25%	26%	23%	18%	12%	**26%**	**28%**	**25%**	**21%**
BP	UK ($)	94.0	20%	21%	21%	19%	16%	17%	17%	19%	18%	16%	14%	**19%**	**17%**	**18%**	**17%**
Cenovus	Canada (C$)	11.3	36%	34%	23%	26%	22%	30%	12%	18%	17%	15%	12%	**27%**	**26%**	**15%**	**15%**
Chevron Corp.	US ($)	144.3	2%	net cash	net cash	net cash	2%	8%	15%	18%	16%	13%	9%	**5%**	**5%**	**16%**	**14%**
Eni	Italy (€)	58.0	31%	32%	32%	21%	20%	19%	20%	19%	16%	12%	6%	**25%**	**19%**	**19%**	**14%**
ExxonMobil	US ($)	302.1	net cash	4%	3%	1%	9%	12%	16%	18%	18%	19%	19%	**6%**	**10%**	**17%**	**18%**
GALP	Portugal (€)	8.3	45%	51%	54%	20%	25%	28%	26%	26%	30%	30%	29%	**36%**	**27%**	**26%**	**28%**
Gazprom	Russia ($)	49.6	0%	0%	0%	0%	0%	0%	14%	14%	13%	10%	8%	**0%**	**0%**	**14%**	**12%**
Gazprom Neft	Russia ($)	11.0	34%	31%	25%	16%	19%	32%	28%	28%	22%	16%	9%	**25%**	**26%**	**28%**	**21%**
Husky Energy	Canada (C$)	16.3	15%	16%	7%	7%	11%	16%	25%	25%	27%	23%	25%	**11%**	**13%**	**25%**	**25%**
Imperial Oil	Canada (C$)	27.9	net cash	0%	8%	13%	27%	25%	26%	24%	20%	16%	12%	**15%**	**26%**	**25%**	**20%**
Lukoil	Russia ($)	27.4	14%	13%	9%	5%	10%	11%	11%	12%	11%	9%	7%	**10%**	**11%**	**12%**	**10%**
MOL	Hungary (HUF)	4.8	33%	31%	28%	25%	16%	20%	20%	19%	20%	18%	16%	**24%**	**18%**	**20%**	**19%**
Novatek	Russia ($)	28.2	19%	30%	23%	28%	30%	35%	26%	6%	net cash	net cash	net cash	**29%**	**32%**	**16%**	**16%**
OMV	Austria (€)	8.1	29%	31%	28%	24%	28%	30%	31%	33%	33%	33%	32%	**28%**	**29%**	**32%**	**32%**
Petrobras (PN)	Brazil (BrR)	31.6	29%	16%	23%	31%	40%	48%	55%	55%	53%	51%	48%	**32%**	**44%**	**55%**	**52%**
PetroChina	China (Rmb)	238.2	15%	17%	20%	27%	28%	28%	32%	33%	32%	30%	29%	**24%**	**28%**	**33%**	**31%**
PTT Public Company	Thailand (Bt)	20.7	33%	28%	30%	30%	28%	28%	33%	35%	36%	36%	36%	**29%**	**28%**	**34%**	**35%**
Reliance Industries	India (INR)	36.9	31%	26%	26%	13%	4%	19%	25%	30%	24%	18%	10%	**18%**	**11%**	**28%**	**22%**
Repsol	Spain (€)	18.4	40%	29%	36%	28%	13%	12%	34%	36%	36%	35%	34%	**24%**	**13%**	**35%**	**35%**
Rosneft	Russia ($)	38.9	32%	26%	22%	23%	45%	59%	53%	44%	36%	27%	17%	**35%**	**52%**	**49%**	**35%**
Royal Dutch Shell	UK (p)	156.1	15%	17%	13%	9%	16%	12%	13%	13%	14%	14%	13%	**14%**	**14%**	**13%**	**13%**
Sasol	S.Africa (Rd)	18.8	net cash	1%	0%	1%	net cash	net cash	2%	19%	23%	22%	18%	**1%**	**-**	**11%**	**17%**
Sinopec	China (Rmb)	89.5	33%	31%	31%	32%	33%	35%	23%	21%	20%	20%	19%	**32%**	**34%**	**22%**	**21%**
Statoil	Norway (Nkr)	46.3	27%	24%	20%	11%	14%	19%	27%	31%	31%	29%	26%	**18%**	**17%**	**29%**	**29%**
Suncor Energy	Canada (C$)	38.2	29%	25%	13%	11%	11%	14%	19%	20%	17%	15%	11%	**15%**	**12%**	**19%**	**16%**
Surgutneftegaz	Russia ($)	22.4	net cash	net cash	net cash	net cash	net cash	net cash	net cash	net cash	net cash	net cash	net cash	**-**	**-**	**-**	**-**
TOTAL	France ($)	102.1	21%	20%	20%	18%	19%	24%	22%	23%	23%	23%	22%	**20%**	**22%**	**22%**	**22%**
Global			**20%**	**17%**	**17%**	**15%**	**17%**	**20%**	**22%**	**23%**	**22%**	**20%**	**18%**	**17%**	**19%**	**22%**	**21%**
Big Five			**15%**	**13%**	**11%**	**8%**	**11%**	**13%**	**16%**	**18%**	**18%**	**17%**	**16%**	**11%**	**12%**	**17%**	**17%**
North America			**10%**	**8%**	**5%**	**4%**	**8%**	**12%**	**16%**	**19%**	**18%**	**17%**	**15%**	**8%**	**10%**	**18%**	**17%**
Europe			**23%**	**22%**	**22%**	**16%**	**18%**	**18%**	**20%**	**21%**	**20%**	**19%**	**16%**	**19%**	**18%**	**20%**	**19%**
EM			**20%**	**17%**	**19%**	**21%**	**26%**	**30%**	**29%**	**29%**	**28%**	**26%**	**23%**	**23%**	**28%**	**29%**	**27%**

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	34%	32%	41%	32%	33%	39%	47%	51%	52%	48%	47%	**35%**	**36%**	**49%**	**49%**
Apache Corp.	US ($)	16.1	15%	29%	23%	30%	18%	29%	38%	41%	41%	41%	40%	**26%**	**24%**	**40%**	**40%**
Cabot Oil & Gas	US ($)	9.4	31%	36%	31%	36%	35%	46%	48%	48%	38%	25%	12%	**37%**	**40%**	**48%**	**34%**
Canadian Natural	Canada (C$)	22.6	-	-	29%	29%	30%	34%	38%	39%	31%	29%	20%	**30%**	**32%**	**39%**	**31%**
Chesapeake Energy	US ($)	4.8	53%	65%	60%	61%	60%	51%	80%	84%	85%	85%	84%	**59%**	**55%**	**82%**	**84%**
CNOOC Ltd	China (Rmb)	50.8	net cash	net cash	net cash	net cash	21%	21%	27%	23%	15%	9%	2%	**21%**	**21%**	**25%**	**15%**
Concho	US ($)	12.6	42%	44%	44%	49%	51%	42%	38%	39%	39%	39%	38%	**46%**	**46%**	**38%**	**39%**
ConocoPhillips	US ($)	58.2	32%	18%	23%	23%	25%	27%	36%	42%	44%	46%	49%	**23%**	**26%**	**39%**	**43%**
Continental	US ($)	11.5	33%	46%	38%	54%	56%	57%	61%	61%	58%	53%	48%	**50%**	**56%**	**61%**	**56%**
Crescent Point	Canada (C$)	5.6	-	-	19%	18%	21%	25%	27%	29%	31%	33%	33%	**20%**	**23%**	**28%**	**30%**
Devon Energy	US ($)	16.5	30%	13%	14%	21%	24%	26%	34%	35%	34%	33%	31%	**19%**	**25%**	**35%**	**33%**
Encana	Canada (US$)	5.6	-	-	32%	50%	51%	45%	42%	44%	47%	40%	32%	**45%**	**48%**	**43%**	**41%**
EOG Resources	US ($)	42.2	18%	31%	25%	28%	23%	18%	24%	26%	24%	22%	19%	**25%**	**21%**	**25%**	**23%**
Hess Corp.	US ($)	16.2	19%	20%	24%	26%	12%	15%	13%	17%	18%	19%	17%	**19%**	**14%**	**15%**	**17%**
Lundin Petroleum	Sweden ($)	3.9	-	-	-	21%	48%	85%	99%	95%	91%	87%	85%	**51%**	**67%**	**97%**	**91%**
Marathon Oil	US ($)	11.1	23%	13%	20%	24%	24%	12%	25%	28%	29%	29%	28%	**19%**	**18%**	**27%**	**28%**
Murphy Oil	US ($)	4.9	2%	4%	net cash	15%	24%	22%	32%	40%	45%	49%	52%	**16%**	**23%**	**36%**	**44%**
Noble Energy	US ($)	13.2	18%	21%	35%	30%	32%	35%	38%	40%	44%	47%	51%	**31%**	**33%**	**39%**	**44%**
Occidental Petroleum	US ($)	53.2	2%	net cash	6%	11%	9%	3%	16%	28%	32%	33%	33%	**7%**	**6%**	**22%**	**28%**
Oil & Natural Gas	India (INR)	28.9	net cash	net cash	net cash	net cash	1%	11%	16%	13%	14%	15%	13%	**6%**	**6%**	**15%**	**14%**
Pioneer Natural Res.	US ($)	17.7	43%	34%	27%	39%	25%	18%	21%	30%	37%	39%	38%	**28%**	**21%**	**25%**	**33%**
PTT E&P (F)	Thailand (Bt)	8.1	0%	13%	67%	16%	17%	2%	net cash	1%	5%	net cash	net cash	**23%**	**10%**	**1%**	**3%**
Range Resources	US ($)	6.2	44%	49%	48%	56%	58%	49%	51%	53%	51%	47%	40%	**52%**	**53%**	**52%**	**48%**
Southwestern Energy	US ($)	5.9	29%	29%	24%	35%	36%	59%	60%	60%	58%	34%	32%	**36%**	**47%**	**60%**	**49%**
Tullow	UK ($)	2.8	18%	32%	37%	14%	25%	43%	53%	57%	59%	61%	62%	**30%**	**34%**	**55%**	**58%**
Woodside Petroleum	Australia (A$)	17.4	31%	27%	30%	12%	10%	net cash	21%	19%	13%	4%	net cash	**20%**	**10%**	**20%**	**14%**
North America			**23%**	**25%**	**25%**	**28%**	**27%**	**28%**	**33%**	**38%**	**38%**	**37%**	**34%**	**27%**	**27%**	**35%**	**36%**
International			**20%**	**25%**	**41%**	**14%**	**16%**	**20%**	**25%**	**22%**	**18%**	**14%**	**12%**	**23%**	**18%**	**23%**	**18%**
Global			**23%**	**25%**	**27%**	**26%**	**24%**	**26%**	**31%**	**34%**	**34%**	**32%**	**30%**	**26%**	**25%**	**32%**	**32%**

EV/DACF ($)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	9.4x	9.5x	10.9x	9.5x	8.9x	11.2x	12.5x	9.5x	6.6x	5.8x	5.0x	10.0x	10.0x	11.0x	7.9x
BP	UK ($)	94.0	5.8x	5.4x	4.9x	5.4x	5.6x	6.5x	5.5x	5.5x	4.8x	4.4x	4.0x	5.5x	6.0x	5.5x	4.9x
Cenovus	Canada (C$)	11.3	-	-	8.2x	7.4x	6.7x	7.4x	8.5x	9.8x	5.9x	5.2x	4.9x	7.4x	7.0x	9.2x	6.8x
Chevron Corp.	US ($)	144.3	6.5x	5.0x	5.1x	5.3x	6.4x	7.5x	8.3x	6.7x	5.4x	4.9x	4.4x	5.9x	7.0x	7.5x	5.9x
Eni	Italy (€)	58.0	5.2x	5.0x	6.5x	5.6x	9.8x	6.6x	6.2x	5.0x	4.0x	3.5x	3.1x	6.7x	8.2x	5.6x	4.4x
ExxonMobil	US ($)	302.1	10.9x	7.2x	7.0x	7.2x	8.3x	8.8x	10.1x	10.5x	8.9x	8.4x	8.1x	7.7x	8.5x	10.3x	9.2x
GALP	Portugal (€)	8.3	71.0x	19.4x	24.3x	14.2x	15.3x	20.3x	8.2x	7.8x	7.5x	7.1x	6.5x	18.7x	17.8x	8.0x	7.4x
Gazprom	Russia ($)	49.6	4.5x	4.0x	3.2x	3.5x	2.3x	2.5x	2.7x	2.8x	2.4x	2.0x	1.9x	3.1x	2.4x	2.7x	2.4x
Gazprom Neft	Russia ($)	11.0	5.6x	4.7x	4.4x	3.7x	3.0x	3.4x	3.0x	4.0x	2.6x	2.1x	1.9x	3.8x	3.2x	3.5x	2.7x
Husky Energy	Canada (C$)	16.3	-	-	5.1x	6.0x	6.7x	7.2x	7.8x	6.9x	5.8x	5.3x	5.3x	6.2x	7.0x	7.4x	6.2x
Imperial Oil	Canada (C$)	27.9	14.4x	11.2x	9.6x	8.0x	10.0x	9.0x	12.2x	9.2x	6.7x	6.3x	5.4x	9.6x	9.5x	10.7x	7.9x
Lukoil	Russia ($)	27.4	5.3x	3.9x	3.5x	2.7x	3.2x	3.2x	2.8x	3.4x	2.6x	2.2x	2.0x	3.3x	3.2x	3.1x	2.6x
MOL	Hungary (HUF)	4.8	7.5x	5.8x	5.7x	5.4x	4.6x	4.7x	3.5x	4.1x	3.9x	3.4x	3.3x	5.2x	4.6x	3.8x	3.6x
Novatek	Russia ($)	28.2	11.8x	16.7x	16.3x	15.7x	11.8x	12.6x	13.2x	9.2x	7.0x	6.2x	5.5x	14.6x	12.2x	11.2x	8.2x
OMV	Austria (€)	8.1	5.9x	5.2x	5.7x	4.3x	6.3x	4.6x	4.9x	5.6x	5.0x	4.9x	4.7x	5.2x	5.5x	5.2x	5.0x
Petrobras (PN)	Brazil (BrR)	31.6	7.8x	7.7x	7.1x	7.5x	7.6x	43.2x	9.7x	8.5x	6.0x	5.5x	5.1x	14.6x	25.4x	9.1x	7.0x
PetroChina	China (Rmb)	238.2	11.5x	8.6x	8.8x	7.7x	7.4x	7.3x	11.0x	10.1x	7.8x	7.1x	6.4x	7.9x	7.3x	10.6x	8.5x
PTT Public Company	Thailand (Bt)	20.7	20.5x	10.8x	8.3x	7.8x	10.5x	5.8x	5.6x	7.2x	7.9x	7.5x	7.2x	8.6x	8.2x	7.2x	7.5x
Reliance Industries	India (INR)	36.9	12.3x	10.0x	11.5x	10.9x	7.3x	7.6x	9.1x	9.0x	7.4x	6.1x	5.1x	9.5x	7.5x	9.0x	7.3x
Repsol	Spain (€)	18.4	6.5x	3.9x	7.9x	6.4x	8.5x	8.8x	7.7x	6.1x	5.0x	4.6x	4.4x	7.1x	8.7x	6.9x	5.5x
Rosneft	Russia ($)	38.9	7.7x	5.9x	6.1x	5.3x	3.3x	3.1x	3.8x	4.0x	3.5x	3.1x	3.0x	4.7x	3.2x	3.9x	3.5x
Royal Dutch Shell	UK (p)	156.1	6.7x	6.5x	6.7x	6.0x	5.3x	5.6x	5.2x	5.3x	4.7x	4.5x	4.2x	6.0x	5.4x	5.3x	4.8x
Sasol	S.Africa (Rd)	18.8	5.4x	6.0x	6.9x	7.7x	5.7x	4.8x	6.5x	11.7x	9.2x	8.2x	5.8x	6.2x	5.3x	9.1x	8.3x
Sinopec	China (Rmb)	89.5	6.3x	5.1x	4.6x	4.3x	4.6x	5.7x	5.3x	4.6x	3.9x	3.5x	3.3x	4.9x	5.2x	4.9x	4.1x
Statoil	Norway (Nkr)	46.3	4.1x	3.5x	5.4x	4.5x	4.9x	6.2x	4.6x	4.3x	3.8x	3.7x	3.4x	4.9x	5.5x	4.4x	4.0x
Suncor Energy	Canada (C$)	38.2	-	-	6.3x	5.6x	5.4x	6.5x	7.8x	7.9x	6.7x	6.5x	5.3x	5.9x	6.0x	7.8x	6.8x
Surgutneftegaz	Russia ($)	22.4	1.2x	1.9x	1.3x	0.6x	0.1x	-1.3x	-3.1x	-2.6x	-2.3x	-2.1x	-2.4x	0.5x	-0.6x	-2.9x	-2.5x
TOTAL	France ($)	102.1	6.2x	5.1x	4.7x	4.1x	4.5x	4.7x	5.5x	5.7x	5.0x	4.7x	4.5x	4.6x	4.6x	5.6x	5.1x
Global			7.4x	6.1x	6.0x	5.7x	5.6x	4.0x	5.9x	5.8x	5.0x	4.6x	4.2x	5.5x	4.8x	5.9x	5.1x
Big Five			7.6x	6.0x	5.9x	5.9x	6.4x	6.9x	7.1x	7.1x	6.0x	5.6x	5.2x	6.2x	6.7x	7.1x	6.2x
North America			9.7x	6.6x	6.4x	6.5x	7.5x	8.2x	9.7x	9.3x	7.5x	7.0x	6.4x	7.0x	7.9x	9.5x	8.0x
Europe			6.3x	5.6x	6.1x	5.5x	5.9x	6.2x	5.7x	5.6x	4.8x	4.5x	4.2x	5.9x	6.1x	5.6x	5.0x
EM			7.2x	6.2x	5.7x	5.3x	4.5x	-1.2x	4.6x	4.9x	4.2x	3.9x	3.6x	4.1x	1.7x	4.7x	4.2x

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	7.7x	6.9x	6.6x	6.2x	7.0x	6.3x	9.6x	10.5x	7.7x	6.7x	5.3x	6.6x	6.6x	10.0x	8.0x
Apache Corp.	US ($)	16.1	6.5x	6.0x	5.3x	4.8x	4.7x	5.6x	8.3x	7.4x	5.4x	5.0x	4.4x	5.3x	5.1x	7.9x	6.1x
Cabot Oil & Gas	US ($)	9.4	6.4x	7.9x	11.3x	12.0x	12.8x	11.6x	13.2x	10.4x	5.9x	4.6x	3.6x	11.1x	12.2x	11.8x	7.5x
Canadian Natural	Canada (C$)	22.6	-	-	7.7x	6.8x	6.1x	6.5x	8.5x	7.8x	5.3x	4.4x	3.5x	6.9x	6.3x	8.2x	5.9x
Chesapeake Energy	US ($)	4.8	6.3x	6.4x	7.2x	9.1x	6.8x	6.6x	8.1x	15.4x	9.7x	8.1x	7.1x	7.2x	6.7x	11.8x	9.7x
CNOOC Ltd	China (Rmb)	50.8	7.2x	6.2x	5.8x	5.4x	4.8x	4.3x	4.2x	3.9x	3.0x	2.6x	2.1x	5.3x	4.6x	4.1x	3.2x
Concho	US ($)	12.6	7.5x	9.7x	8.8x	8.7x	8.1x	8.5x	9.7x	9.3x	8.5x	7.1x	6.1x	8.7x	8.3x	9.5x	8.1x
ConocoPhillips	US ($)	58.2	5.9x	5.4x	4.5x	6.2x	6.4x	6.3x	10.0x	8.3x	6.7x	5.8x	5.5x	5.7x	6.4x	9.2x	7.3x
Continental	US ($)	11.5	12.7x	11.2x	9.3x	9.0x	7.7x	7.7x	10.0x	8.5x	6.1x	5.0x	4.1x	9.0x	7.7x	9.2x	6.7x
Crescent Point	Canada (C$)	5.6	-	-	8.0x	7.3x	8.2x	8.3x	5.9x	6.4x	6.0x	5.8x	5.1x	8.4x	8.3x	6.2x	5.8x
Devon Energy	US ($)	16.5	7.5x	5.8x	5.8x	6.2x	5.4x	5.6x	5.7x	9.7x	6.1x	5.0x	4.3x	5.8x	5.5x	7.7x	6.1x
Encana	Canada (US$)	5.6	-	-	6.2x	5.4x	6.4x	7.3x	6.0x	6.9x	4.9x	3.5x	2.5x	6.3x	6.8x	6.4x	4.7x
EOG Resources	US ($)	42.2	6.4x	9.4x	6.6x	5.7x	5.9x	6.9x	11.4x	11.1x	8.1x	6.9x	5.8x	6.9x	6.4x	11.3x	8.7x
Hess Corp.	US ($)	16.2	6.8x	5.2x	6.9x	4.7x	5.0x	5.9x	7.6x	6.3x	4.5x	4.0x	3.6x	5.5x	5.5x	6.9x	5.2x
Lundin Petroleum	Sweden ($)	3.9	-	-	-	7.1x	7.5x	12.1x	23.9x	7.2x	5.5x	6.4x	7.7x	8.9x	9.8x	15.6x	10.1x
Marathon Oil	US ($)	11.1	4.2x	3.9x	5.0x	5.8x	5.7x	6.2x	7.0x	7.2x	6.0x	4.2x	3.5x	5.4x	6.0x	7.1x	5.6x
Murphy Oil	US ($)	4.9	4.7x	4.2x	3.5x	3.2x	4.0x	4.0x	6.6x	6.0x	4.9x	5.9x	16.9x	3.8x	4.0x	6.3x	8.1x
Noble Energy	US ($)	13.2	6.7x	7.3x	7.5x	6.8x	7.5x	8.3x	2.5x	8.4x	6.5x	5.6x	4.4x	7.5x	7.9x	5.5x	5.5x
Occidental Petroleum	US ($)	53.2	8.2x	8.1x	6.7x	6.2x	6.5x	7.6x	13.0x	11.4x	8.4x	7.4x	6.5x	7.0x	7.1x	12.2x	9.3x
Oil & Natural Gas	India (INR)	28.9	6.7x	7.5x	7.1x	5.2x	6.9x	5.5x	5.2x	4.4x	4.0x	4.0x	4.0x	6.4x	6.2x	4.8x	4.3x
Pioneer Natural Res.	US ($)	17.7	6.6x	8.1x	7.4x	8.0x	10.6x	11.7x	11.2x	10.7x	9.3x	7.1x	5.4x	9.2x	11.1x	10.9x	8.7x
PTT E&P (F)	Thailand (Bt)	8.1	7.9x	6.9x	7.2x	6.2x	6.1x	3.7x	2.2x	2.1x	2.1x	2.0x	1.8x	6.0x	4.9x	2.1x	2.0x
Range Resources	US ($)	6.2	11.2x	12.7x	13.0x	13.9x	14.1x	13.7x	11.2x	12.6x	7.7x	5.4x	4.0x	13.5x	13.9x	11.9x	8.2x
Southwestern Energy	US ($)	5.9	10.3x	9.3x	8.7x	8.2x	7.7x	8.2x	9.7x	8.9x	6.0x	4.0x	3.2x	8.4x	7.9x	9.3x	6.4x
Tullow	UK ($)	2.8	25.7x	28.8x	15.5x	17.2x	10.0x	7.3x	8.1x	7.4x	6.3x	6.1x	5.8x	15.8x	8.6x	7.7x	6.7x
Woodside Petroleum	Australia (A$)	17.4	11.8x	15.0x	14.8x	6.9x	9.3x	7.0x	6.8x	8.5x	6.6x	5.5x	5.1x	10.6x	8.2x	7.6x	6.5x
North America			6.6x	6.1x	5.9x	6.1x	6.2x	6.9x	7.2x	8.3x	6.8x	5.7x	4.7x	6.2x	6.5x	7.8x	6.5x
International			7.7x	7.6x	7.3x	6.0x	6.0x	4.5x	3.8x	4.4x	3.7x	3.4x	3.0x	6.3x	5.3x	4.1x	3.7x
Global			7.0x	6.6x	6.3x	6.0x	6.2x	6.2x	-15.5x	-0.3x	5.0x	4.7x	4.0x	6.3x	6.2x	-7.9x	-0.4x

P/E ($)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	16.1x	14.7x	16.1x	15.5x	14.4x	15.9x	38.5x	25.6x	12.5x	10.2x	8.6x	**15.3x**	**15.2x**	**32.1x**	**19.1x**
BP	UK ($)	94.0	10.6x	6.9x	6.3x	7.4x	10.1x	11.6x	14.1x	14.2x	10.2x	9.1x	8.4x	**8.5x**	**10.9x**	**14.1x**	**11.2x**
Cenovus	Canada (C$)	11.3	-	-	17.7x	26.0x	36.0x	30.9x	349.0x	-100.4x	31.3x	21.4x	18.6x	**27.7x**	**33.4x**	**124.3x**	**64.0x**
Chevron Corp.	US ($)	144.3	14.6x	8.3x	7.6x	8.9x	10.8x	12.9x	29.6x	29.1x	15.5x	13.0x	11.2x	**9.7x**	**11.9x**	**29.3x**	**19.7x**
Eni	Italy (€)	58.0	11.6x	8.7x	8.2x	8.8x	14.4x	17.5x	41.8x	28.2x	12.6x	10.2x	8.7x	**11.5x**	**16.0x**	**35.0x**	**20.3x**
ExxonMobil	US ($)	302.1	18.0x	10.3x	9.5x	10.4x	12.3x	14.0x	19.2x	20.7x	15.7x	14.9x	14.4x	**11.3x**	**13.1x**	**19.9x**	**17.0x**
GALP	Portugal (€)	8.3	39.9x	34.5x	47.4x	27.2x	32.7x	27.0x	13.5x	17.2x	14.6x	11.3x	8.7x	**33.7x**	**29.8x**	**15.3x**	**13.0x**
Gazprom	Russia ($)	49.6	4.6x	4.2x	3.5x	3.2x	2.8x	11.7x	3.0x	2.1x	1.8x	1.6x	1.6x	**5.1x**	**7.3x**	**2.5x**	**2.0x**
Gazprom Neft	Russia ($)	11.0	5.6x	6.6x	4.0x	4.0x	3.6x	5.1x	3.4x	2.5x	1.6x	1.4x	1.5x	**4.6x**	**4.3x**	**3.0x**	**2.1x**
Husky Energy	Canada (C$)	16.3	-	-	11.4x	12.6x	16.1x	25.1x	-1670.3x	65.0x	23.9x	24.4x	19.4x	**16.3x**	**20.6x**	**-802.6x**	**-307.5x**
Imperial Oil	Canada (C$)	27.9	21.6x	15.3x	11.2x	10.1x	12.6x	10.7x	19.4x	14.4x	9.2x	9.0x	7.7x	**12.0x**	**11.6x**	**16.9x**	**11.9x**
Lukoil	Russia ($)	27.4	5.8x	5.0x	4.7x	4.2x	6.1x	8.6x	8.9x	6.1x	3.6x	3.5x	3.2x	**5.7x**	**7.4x**	**7.5x**	**5.1x**
MOL	Hungary (HUF)	4.8	17.4x	8.8x	9.7x	9.2x	12.6x	8.6x	6.1x	8.5x	7.1x	5.6x	5.4x	**9.8x**	**10.6x**	**7.3x**	**6.6x**
Novatek	Russia ($)	28.2	15.5x	18.5x	10.2x	16.4x	10.7x	26.1x	11.9x	9.1x	7.5x	5.7x	4.6x	**16.3x**	**18.4x**	**10.5x**	**7.8x**
OMV	Austria (€)	8.1	13.0x	7.4x	8.2x	5.5x	10.1x	8.6x	7.9x	11.5x	7.8x	6.9x	6.2x	**8.0x**	**9.4x**	**9.7x**	**8.0x**
Petrobras (PN)	Brazil (BrR)	31.6	9.5x	8.9x	9.3x	13.3x	10.3x	-10.2x	20.6x	9.9x	3.6x	2.7x	2.4x	**6.3x**	**0.0x**	**15.3x**	**7.8x**
PetroChina	China (Rmb)	238.2	12.8x	10.4x	11.9x	13.5x	10.6x	12.4x	18.1x	19.0x	10.3x	8.0x	6.7x	**11.8x**	**11.5x**	**18.6x**	**12.4x**
PTT Public Company	Thailand (Bt)	20.7	11.3x	10.3x	9.0x	10.1x	9.6x	11.5x	10.1x	9.7x	8.6x	9.2x	9.4x	**10.1x**	**10.5x**	**9.9x**	**9.4x**
Reliance Industries	India (INR)	36.9	15.0x	12.3x	15.9x	12.5x	11.1x	11.1x	12.0x	9.9x	9.1x	8.2x	6.4x	**12.6x**	**11.1x**	**11.0x**	**9.1x**
Repsol	Spain (€)	18.4	15.9x	11.0x	14.8x	9.9x	12.4x	14.8x	10.0x	12.9x	8.0x	7.1x	6.7x	**12.6x**	**13.6x**	**11.5x**	**9.0x**
Rosneft	Russia ($)	38.9	8.9x	6.6x	6.1x	6.0x	4.6x	7.1x	6.4x	5.4x	3.3x	3.1x	2.6x	**6.1x**	**5.8x**	**5.9x**	**4.2x**
Royal Dutch Shell	UK (p)	156.1	13.9x	9.9x	8.7x	8.6x	10.7x	10.5x	11.7x	11.5x	8.6x	7.8x	7.0x	**9.7x**	**10.6x**	**11.6x**	**9.3x**
Sasol	S.Africa (Rd)	18.8	12.3x	11.0x	10.0x	8.6x	7.3x	8.7x	12.0x	20.6x	11.4x	9.3x	7.3x	**9.1x**	**8.0x**	**16.3x**	**12.1x**
Sinopec	China (Rmb)	89.5	7.3x	6.9x	8.1x	9.2x	10.0x	13.2x	12.7x	11.0x	7.7x	6.5x	5.9x	**9.5x**	**11.6x**	**11.9x**	**8.8x**
Statoil	Norway (Nkr)	46.3	10.7x	10.0x	9.1x	8.4x	9.2x	13.9x	19.1x	15.7x	9.2x	8.2x	7.5x	**10.1x**	**11.5x**	**17.4x**	**11.9x**
Suncor Energy	Canada (C$)	38.2	-	-	13.4x	17.5x	12.9x	21.9x	36.8x	26.3x	20.0x	20.7x	14.7x	**16.4x**	**17.4x**	**31.6x**	**23.7x**
Surgutneftegaz	Russia ($)	22.4	9.3x	9.7x	5.2x	7.5x	4.6x	1.4x	2.6x	6.5x	5.4x	6.4x	4.2x	**5.7x**	**3.0x**	**4.5x**	**5.0x**
TOTAL	France ($)	102.1	11.1x	8.8x	7.6x	7.1x	8.5x	11.3x	11.5x	14.6x	10.4x	9.2x	8.5x	**8.7x**	**9.9x**	**13.0x**	**10.8x**
Global			**11.0x**	**8.5x**	**8.1x**	**8.7x**	**9.0x**	**12.3x**	**12.9x**	**12.3x**	**8.4x**	**7.4x**	**6.6x**	**9.3x**	**10.6x**	**12.6x**	**9.5x**
Big Five			**14.0x**	**9.0x**	**8.2x**	**8.9x**	**10.8x**	**12.3x**	**16.1x**	**17.0x**	**12.0x**	**10.9x**	**9.9x**	**9.8x**	**11.6x**	**16.5x**	**13.2x**
North America			**17.1x**	**9.8x**	**9.4x**	**10.7x**	**12.2x**	**14.3x**	**23.9x**	**23.8x**	**15.8x**	**14.6x**	**13.1x**	**11.3x**	**13.2x**	**23.9x**	**18.2x**
Europe			**12.2x**	**9.1x**	**8.6x**	**8.5x**	**10.7x**	**12.2x**	**14.0x**	**14.7x**	**9.8x**	**8.7x**	**7.8x**	**9.8x**	**11.4x**	**14.3x**	**11.0x**
EM			**8.3x**	**7.6x**	**7.1x**	**7.7x**	**6.6x**	**10.8x**	**8.4x**	**7.3x**	**5.0x**	**4.4x**	**3.9x**	**8.0x**	**8.7x**	**7.9x**	**5.8x**

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	n/m	32.8x	22.6x	20.6x	21.8x	22.9x	n/m	n/m	62.0x	29.7x	20.7x	**24.2x**	**22.4x**	**-**	**37.5x**
Apache Corp.	US ($)	16.1	14.6x	11.4x	9.3x	9.4x	10.2x	14.5x	n/m	n/m	25.8x	18.4x	12.3x	**10.9x**	**12.3x**	**-**	**18.9x**
Cabot Oil & Gas	US ($)	9.4	19.2x	35.9x	46.4x	59.7x	48.4x	35.4x	>100x	57.4x	14.7x	9.9x	8.1x	**45.2x**	**41.9x**	**57.4x**	**22.5x**
Canadian Natural	Canada (C$)	22.6	-	-	17.1x	18.2x	14.8x	12.8x	n/m	>100x	14.5x	10.7x	7.9x	**17.4x**	**13.8x**	**-**	**11.0x**
Chesapeake Energy	US ($)	4.8	7.9x	7.5x	10.0x	30.6x	14.4x	17.3x	n/m	n/m	49.8x	13.3x	9.7x	**16.0x**	**15.9x**	**-**	**24.3x**
CNOOC Ltd	China (Rmb)	50.8	12.8x	10.2x	9.0x	9.0x	9.4x	7.8x	14.9x	16.0x	8.5x	7.2x	5.9x	**9.1x**	**8.6x**	**15.4x**	**10.5x**
Concho	US ($)	12.6	20.4x	21.9x	22.4x	25.0x	26.9x	30.1x	>100x	>100x	>100x	49.8x	30.3x	**25.3x**	**28.5x**	**-**	**40.1x**
ConocoPhillips	US ($)	58.2	9.5x	7.1x	6.2x	10.1x	11.3x	14.0x	n/m	n/m	32.6x	20.1x	16.6x	**9.8x**	**12.7x**	**-**	**23.1x**
Continental	US ($)	11.5	41.5x	26.9x	23.5x	22.7x	17.6x	18.2x	n/m	>100x	22.7x	14.6x	10.8x	**21.8x**	**17.9x**	**-**	**16.0x**
Crescent Point	Canada (C$)	5.6	-	-	62.0x	72.0x	27.6x	32.6x	>100x	n/m	>100x	>100x	32.3x	**48.5x**	**30.1x**	**-**	**32.3x**
Devon Energy	US ($)	16.5	16.5x	11.4x	12.5x	18.9x	13.5x	13.7x	20.6x	n/m	22.3x	12.7x	9.1x	**14.0x**	**13.6x**	**20.6x**	**16.2x**
Encana	Canada (US$)	5.6	-	-	>100x	15.3x	56.9x	4.4x	n/m	>100x	10.1x	5.4x	3.5x	**22.9x**	**30.7x**	**-**	**6.3x**
EOG Resources	US ($)	42.2	24.5x	82.4x	26.4x	19.0x	17.7x	20.0x	n/m	n/m	49.5x	30.2x	20.8x	**33.1x**	**18.9x**	**-**	**33.5x**
Hess Corp.	US ($)	16.2	24.6x	11.7x	11.9x	9.0x	12.9x	20.5x	n/m	n/m	n/m	n/m	>100x	**13.2x**	**16.7x**	**-**	**-**
Lundin Petroleum	Sweden ($)	3.9	8.3x	13.0x	23.7x	21.4x	25.1x	n/m	n/m	23.1x	17.9x	18.5x	21.7x	**20.8x**	**25.1x**	**23.1x**	**20.3x**
Marathon Oil	US ($)	11.1	11.2x	5.4x	8.7x	12.0x	12.9x	19.3x	n/m	n/m	n/m	>100x	27.1x	**11.7x**	**16.1x**	**-**	**27.1x**
Murphy Oil	US ($)	4.9	13.0x	12.2x	8.9x	8.4x	12.2x	17.4x	n/m	n/m	n/m	n/m	n/m	**11.8x**	**14.8x**	**-**	**-**
Noble Energy	US ($)	13.2	17.9x	17.5x	16.8x	18.5x	21.4x	27.2x	>100x	n/m	68.9x	24.7x	13.7x	**20.3x**	**24.3x**	**-**	**35.8x**
Occidental Petroleum	US ($)	53.2	17.8x	14.5x	11.4x	12.4x	12.8x	16.1x	>100x	>100x	27.3x	20.5x	15.6x	**13.4x**	**14.4x**	**-**	**21.2x**
Oil & Natural Gas	India (INR)	28.9	10.8x	9.1x	12.2x	11.6x	10.0x	9.5x	10.6x	6.7x	6.8x	6.3x	6.7x	**10.5x**	**9.7x**	**8.7x**	**7.4x**
Pioneer Natural Res.	US ($)	17.7	n/m	37.0x	22.1x	27.6x	35.1x	40.0x	n/m	n/m	>100x	41.6x	21.1x	**32.4x**	**37.6x**	**-**	**31.4x**
PTT E&P (F)	Thailand (Bt)	8.1	17.5x	13.3x	12.0x	10.7x	10.1x	11.8x	12.2x	13.2x	8.9x	8.4x	7.9x	**11.6x**	**10.9x**	**12.7x**	**10.1x**
Range Resources	US ($)	6.2	43.1x	87.2x	52.6x	66.7x	53.3x	50.2x	>100x	n/m	65.8x	20.9x	13.1x	**62.0x**	**51.8x**	**-**	**33.3x**
Southwestern Energy	US ($)	5.9	25.8x	22.5x	21.7x	23.1x	18.4x	17.6x	96.1x	>100x	14.6x	9.3x	8.8x	**20.7x**	**18.0x**	**96.1x**	**32.2x**
Tullow	UK ($)	2.8	>100x	>100x	29.5x	>100x	64.7x	n/m	50.8x	n/m	29.4x	18.0x	10.7x	**47.1x**	**64.7x**	**50.8x**	**27.2x**
Woodside Petroleum	Australia (A$)	17.4	24.5x	22.0x	19.6x	14.0x	17.4x	12.3x	16.7x	24.5x	14.5x	11.2x	10.9x	**17.0x**	**14.8x**	**20.6x**	**15.5x**
North America			**14.8x**	**12.5x**	**11.7x**	**14.5x**	**15.0x**	**17.0x**	**34.0x**	**57.4x**	**28.3x**	**18.7x**	**13.9x**	**14.1x**	**16.0x**	**45.7x**	**30.5x**
International			**13.7x**	**11.4x**	**11.7x**	**10.8x**	**11.2x**	**9.0x**	**13.3x**	**12.3x**	**8.7x**	**7.7x**	**7.0x**	**10.8x**	**10.1x**	**12.8x**	**9.8x**
Global			**14.4x**	**12.2x**	**11.7x**	**13.0x**	**13.8x**	**14.5x**	**15.5x**	**13.1x**	**17.5x**	**13.7x**	**11.2x**	**13.0x**	**14.2x**	**14.3x**	**14.2x**

P/CEPS ($)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	10.0x	8.4x	10.1x	9.9x	8.6x	9.4x	11.2x	8.7x	6.2x	5.4x	4.9x	9.3x	9.0x	9.9x	7.3x
BP	UK ($)	94.0	4.8x	2.8x	3.8x	3.6x	4.6x	4.7x	2.9x	4.7x	4.1x	3.7x	3.4x	3.9x	4.7x	3.8x	3.8x
Cenovus	Canada (C$)	11.3	-	-	8.0x	7.1x	6.5x	6.6x	8.8x	10.1x	5.7x	5.0x	4.7x	7.1x	6.6x	9.4x	6.9x
Chevron Corp.	US ($)	144.3	6.5x	5.0x	5.2x	5.5x	6.4x	7.1x	7.3x	5.7x	4.6x	4.3x	4.0x	5.9x	6.8x	6.5x	5.2x
Eni	Italy (€)	58.0	5.3x	4.1x	4.0x	5.0x	5.8x	4.3x	3.8x	3.8x	3.2x	2.9x	2.7x	4.6x	5.1x	3.8x	3.3x
ExxonMobil	US ($)	302.1	11.4x	7.1x	6.9x	7.2x	8.1x	8.3x	9.2x	9.6x	8.1x	7.7x	7.3x	7.5x	8.2x	9.4x	8.4x
GALP	Portugal (€)	8.3	16.9x	18.0x	35.9x	33.5x	12.8x	11.1x	4.8x	6.6x	5.3x	4.2x	3.4x	22.3x	12.0x	5.7x	4.9x
Gazprom	Russia ($)	49.6	3.4x	3.1x	2.7x	2.8x	1.7x	1.8x	1.7x	1.7x	1.4x	1.2x	1.2x	2.4x	1.8x	1.7x	1.4x
Gazprom Neft	Russia ($)	11.0	4.9x	3.8x	3.6x	3.0x	2.3x	2.4x	1.7x	2.3x	1.5x	1.2x	1.3x	3.0x	2.4x	2.0x	1.6x
Husky Energy	Canada (C$)	16.3	-	-	5.0x	5.8x	6.3x	6.7x	6.3x	5.5x	4.5x	4.3x	4.2x	6.0x	6.5x	5.9x	5.0x
Imperial Oil	Canada (C$)	27.9	-	-	9.3x	7.5x	8.6x	8.4x	12.8x	9.6x	7.2x	7.0x	6.2x	8.4x	8.5x	11.2x	8.6x
Lukoil	Russia ($)	27.4	4.6x	3.4x	3.1x	2.4x	2.7x	2.7x	2.1x	2.5x	1.9x	1.7x	1.6x	2.9x	2.7x	2.3x	2.0x
MOL	Hungary (HUF)	4.8	4.2x	5.0x	4.0x	3.7x	2.9x	3.4x	2.7x	2.7x	2.5x	2.1x	2.1x	3.8x	3.1x	2.7x	2.4x
Novatek	Russia ($)	28.2	10.9x	16.7x	16.5x	15.8x	13.2x	11.6x	11.1x	8.9x	7.3x	7.2x	7.2x	14.8x	12.4x	10.0x	8.3x
OMV	Austria (€)	8.1	3.5x	2.5x	2.2x	1.8x	3.3x	2.3x	2.2x	2.5x	2.1x	2.0x	1.9x	2.4x	2.8x	2.3x	2.1x
Petrobras (PN)	Brazil (BrR)	31.6	6.4x	7.7x	6.1x	6.5x	4.6x	24.1x	2.4x	2.1x	1.4x	1.2x	1.1x	9.8x	14.4x	2.3x	1.7x
PetroChina	China (Rmb)	238.2	6.7x	5.7x	5.8x	5.8x	4.7x	4.7x	3.9x	3.9x	3.3x	3.0x	2.7x	5.4x	4.7x	3.9x	3.4x
PTT Public Company	Thailand (Bt)	20.7	6.3x	6.1x	5.9x	6.0x	5.4x	4.9x	4.5x	4.4x	3.9x	3.9x	3.7x	5.6x	5.1x	4.5x	4.1x
Reliance Industries	India (INR)	36.9	10.9x	8.5x	10.4x	7.9x	6.0x	5.4x	5.6x	6.7x	5.8x	5.2x	4.3x	7.6x	5.7x	6.1x	5.5x
Repsol	Spain (€)	18.4	3.8x	2.6x	4.9x	4.2x	7.5x	7.5x	3.5x	3.6x	3.0x	2.8x	2.7x	5.4x	7.5x	3.6x	3.1x
Rosneft	Russia ($)	38.9	5.6x	4.6x	4.8x	4.0x	2.0x	1.5x	1.5x	1.7x	1.7x	1.7x	1.9x	3.4x	1.8x	1.6x	1.7x
Royal Dutch Shell	UK (p)	156.1	3.0x	5.4x	5.0x	5.1x	5.6x	6.1x	5.2x	4.8x	4.2x	3.9x	3.6x	5.4x	5.8x	5.0x	4.3x
Sasol	S.Africa (Rd)	18.8	8.9x	7.8x	7.3x	6.3x	5.3x	6.4x	6.7x	9.9x	7.1x	6.2x	5.2x	6.6x	5.8x	8.3x	7.0x
Sinopec	China (Rmb)	89.5	3.9x	3.7x	4.2x	4.4x	4.1x	4.9x	3.8x	3.6x	3.0x	2.7x	2.6x	4.3x	4.5x	3.7x	3.1x
Statoil	Norway (Nkr)	46.3	3.9x	3.1x	3.6x	3.1x	4.7x	5.6x	3.5x	3.2x	2.7x	2.6x	2.4x	4.0x	5.2x	3.4x	2.9x
Suncor Energy	Canada (C$)	38.2	-	-	5.9x	5.1x	5.4x	6.5x	7.7x	7.0x	6.0x	5.9x	4.9x	5.7x	5.9x	7.4x	6.3x
Surgutneftegaz	Russia ($)	22.4	4.7x	5.2x	4.1x	4.0x	3.6x	4.5x	4.0x	3.0x	2.7x	2.6x	2.8x	4.3x	4.1x	3.5x	3.0x
TOTAL	France ($)	102.1	5.4x	4.6x	4.0x	4.0x	4.6x	6.8x	5.0x	5.3x	4.4x	4.0x	3.8x	4.8x	5.7x	5.1x	4.5x
Global			**5.7x**	**4.9x**	**5.1x**	**5.1x**	**4.8x**	**5.3x**	**4.5x**	**4.6x**	**3.8x**	**3.5x**	**3.3x**	**5.0x**	**5.1x**	**4.6x**	**3.9x**
Big Five			**6.2x**	**5.1x**	**5.2x**	**5.3x**	**6.0x**	**6.7x**	**5.9x**	**6.1x**	**5.1x**	**4.8x**	**4.5x**	**5.6x**	**6.3x**	**6.0x**	**5.3x**
North America			**9.4x**	**6.3x**	**6.3x**	**6.4x**	**7.1x**	**7.7x**	**8.5x**	**7.8x**	**6.4x**	**6.0x**	**5.6x**	**6.8x**	**7.4x**	**8.1x**	**6.8x**
Europe			**4.6x**	**4.1x**	**4.6x**	**4.6x**	**5.3x**	**5.8x**	**4.4x**	**4.7x**	**3.9x**	**3.6x**	**3.4x**	**4.9x**	**5.5x**	**4.6x**	**4.0x**
EM			**5.3x**	**5.1x**	**4.8x**	**4.7x**	**3.4x**	**3.8x**	**2.9x**	**3.0x**	**2.5x**	**2.3x**	**2.2x**	**4.3x**	**3.6x**	**3.0x**	**2.6x**

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	6.5x	5.6x	5.6x	5.1x	6.0x	5.3x	7.9x	8.1x	5.6x	4.7x	4.2x	**5.5x**	**5.6x**	**8.0x**	**6.1x**
Apache Corp.	US ($)	16.1	6.1x	5.3x	4.6x	3.9x	3.7x	4.5x	6.1x	5.5x	3.9x	3.5x	3.1x	**4.4x**	**4.1x**	**5.8x**	**4.4x**
Cabot Oil & Gas	US ($)	9.4	5.7x	7.1x	11.0x	11.6x	12.5x	11.1x	12.0x	9.3x	5.1x	4.0x	3.4x	**10.7x**	**11.8x**	**10.6x**	**6.8x**
Canadian Natural	Canada (C$)	22.6	-	-	7.2x	6.0x	4.9x	5.3x	5.9x	5.2x	3.7x	3.2x	2.8x	**5.9x**	**5.1x**	**5.5x**	**4.1x**
Chesapeake Energy	US ($)	4.8	3.8x	4.0x	4.9x	6.1x	4.3x	4.8x	3.5x	9.6x	3.5x	2.6x	2.3x	**4.8x**	**4.5x**	**6.6x**	**4.3x**
CNOOC Ltd	China (Rmb)	50.8	8.3x	6.8x	6.3x	5.9x	4.7x	3.9x	3.3x	3.3x	2.8x	2.7x	2.4x	**5.5x**	**4.3x**	**3.3x**	**2.9x**
Concho	US ($)	12.6	6.2x	8.5x	8.6x	7.7x	6.8x	7.4x	8.3x	8.2x	7.3x	5.9x	5.0x	**7.8x**	**7.1x**	**8.2x**	**6.9x**
ConocoPhillips	US ($)	58.2	4.0x	4.2x	3.8x	5.1x	5.5x	5.5x	7.7x	6.5x	4.7x	4.0x	3.7x	**4.8x**	**5.5x**	**7.1x**	**5.3x**
Continental	US ($)	11.5	12.2x	11.0x	9.3x	8.3x	6.7x	6.6x	7.4x	6.0x	4.1x	3.3x	2.8x	**8.4x**	**6.7x**	**6.7x**	**4.7x**
Crescent Point	Canada (C$)	5.6	-	-	9.7x	8.7x	7.6x	7.5x	4.2x	4.5x	4.2x	4.0x	3.4x	**8.8x**	**7.6x**	**4.4x**	**4.1x**
Devon Energy	US ($)	16.5	6.8x	5.5x	5.6x	5.7x	4.7x	4.7x	4.0x	7.1x	4.2x	3.4x	2.9x	**5.2x**	**4.7x**	**5.6x**	**4.3x**
Encana	Canada (US$)	5.6	-	-	4.9x	4.4x	5.4x	5.6x	3.9x	4.2x	2.7x	2.0x	1.5x	**5.1x**	**5.5x**	**4.1x**	**2.9x**
EOG Resources	US ($)	42.2	6.0x	8.6x	6.0x	5.1x	5.5x	6.6x	10.9x	10.4x	7.4x	6.3x	5.4x	**6.4x**	**6.0x**	**10.7x**	**8.1x**
Hess Corp.	US ($)	16.2	5.3x	4.5x	4.5x	3.4x	3.9x	5.4x	6.8x	5.6x	3.9x	3.4x	3.1x	**4.3x**	**4.6x**	**6.2x**	**4.5x**
Lundin Petroleum	Sweden ($)	3.9	1.4x	2.3x	3.7x	3.9x	4.4x	4.6x	10.4x	3.2x	2.4x	2.5x	2.9x	**3.8x**	**4.5x**	**6.8x**	**4.3x**
Marathon Oil	US ($)	11.1	2.8x	2.8x	3.4x	4.6x	4.1x	5.1x	6.4x	5.0x	3.3x	2.6x	2.1x	**4.0x**	**4.6x**	**5.7x**	**3.9x**
Murphy Oil	US ($)	4.9	4.7x	4.1x	3.6x	3.0x	3.4x	3.3x	4.5x	3.6x	2.8x	2.6x	2.5x	**3.5x**	**3.4x**	**4.1x**	**3.2x**
Noble Energy	US ($)	13.2	6.4x	6.8x	7.0x	6.2x	7.0x	7.7x	5.6x	6.0x	4.6x	3.6x	2.8x	**6.9x**	**7.3x**	**5.8x**	**4.5x**
Occidental Petroleum	US ($)	53.2	8.2x	8.1x	6.7x	6.0x	6.2x	7.4x	12.3x	10.1x	7.0x	6.1x	5.3x	**6.9x**	**6.8x**	**11.2x**	**8.2x**
Oil & Natural Gas	India (INR)	28.9	5.2x	6.2x	6.0x	6.2x	6.6x	5.9x	5.4x	4.5x	4.1x	4.0x	4.0x	**6.2x**	**6.2x**	**5.0x**	**4.4x**
Pioneer Natural Res.	US ($)	17.7	5.0x	7.1x	6.9x	7.2x	10.1x	11.7x	11.6x	10.4x	8.1x	5.8x	4.3x	**8.6x**	**10.9x**	**11.0x**	**8.0x**
PTT E&P (F)	Thailand (Bt)	8.1	7.6x	6.6x	7.2x	6.1x	6.0x	4.5x	2.3x	2.2x	2.0x	2.1x	2.1x	**6.1x**	**5.2x**	**2.2x**	**2.1x**
Range Resources	US ($)	6.2	10.8x	12.6x	12.7x	13.7x	13.3x	12.7x	9.0x	10.3x	5.6x	3.8x	2.9x	**13.0x**	**13.0x**	**9.6x**	**6.3x**
Southwestern Energy	US ($)	5.9	10.1x	8.8x	8.1x	7.4x	6.9x	6.4x	4.6x	4.2x	2.8x	2.6x	2.4x	**7.5x**	**6.7x**	**4.4x**	**3.3x**
Tullow	UK ($)	2.8	38.3x	26.9x	14.5x	10.8x	5.8x	3.7x	2.3x	2.1x	1.6x	1.4x	1.2x	**12.3x**	**4.8x**	**2.2x**	**1.7x**
Woodside Petroleum	Australia (A$)	17.4	13.9x	14.4x	14.2x	8.9x	10.1x	7.7x	7.2x	8.6x	6.8x	5.8x	5.8x	**11.1x**	**8.9x**	**7.9x**	**6.9x**
North America			**5.6x**	**5.5x**	**5.4x**	**5.4x**	**5.5x**	**6.0x**	**7.1x**	**7.1x**	**4.9x**	**4.1x**	**3.5x**	**5.6x**	**5.8x**	**7.1x**	**5.3x**
International			**8.9x**	**7.9x**	**7.4x**	**6.6x**	**5.6x**	**4.7x**	**3.9x**	**3.8x**	**3.2x**	**3.0x**	**2.8x**	**6.4x**	**5.2x**	**3.9x**	**3.4x**
Global			**6.4x**	**6.1x**	**5.9x**	**5.7x**	**5.5x**	**5.7x**	**6.1x**	**5.9x**	**4.4x**	**3.8x**	**3.4x**	**5.8x**	**5.6x**	**6.0x**	**4.7x**

Free cash flow yield ($)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	-3.0%	-2.9%	-4.5%	-3.4%	-5.1%	-2.3%	-4.5%	0.0%	4.6%	6.5%	7.9%	**-3.6%**	**-3.7%**	**-2.2%**	**2.9%**
BP	UK ($)	94.0	5.8%	-7.2%	16.6%	3.7%	2.5%	2.3%	1.0%	4.9%	8.8%	11.3%	12.8%	**3.6%**	**2.4%**	**3.0%**	**7.8%**
Cenovus	Canada (C$)	11.3	-	-	2.1%	0.2%	1.1%	2.0%	-3.7%	-0.6%	4.7%	4.9%	6.1%	**1.3%**	**1.6%**	**-2.1%**	**2.3%**
Chevron Corp.	US ($)	144.3	-0.3%	7.5%	7.2%	3.7%	-1.3%	-1.7%	-8.5%	0.6%	7.2%	8.3%	9.6%	**3.1%**	**-1.5%**	**-3.9%**	**3.4%**
Eni	Italy (€)	58.0	-0.9%	4.1%	5.5%	3.7%	-3.4%	0.3%	-3.1%	4.9%	9.9%	12.3%	14.4%	**2.0%**	**-1.6%**	**0.9%**	**7.7%**
ExxonMobil	US ($)	302.1	1.7%	6.8%	6.2%	5.4%	2.8%	2.9%	1.0%	1.3%	3.7%	4.4%	4.8%	**4.8%**	**2.9%**	**1.2%**	**3.1%**
GALP	Portugal (€)	8.3	-2.7%	-6.1%	-5.5%	-6.6%	-1.7%	-2.4%	2.9%	-4.4%	-1.5%	2.6%	7.5%	**-4.5%**	**-2.0%**	**-0.7%**	**1.4%**
Gazprom	Russia ($)	49.6	2.8%	8.7%	0.4%	1.1%	8.7%	16.4%	-1.1%	2.2%	7.9%	24.0%	25.5%	**7.0%**	**12.5%**	**0.5%**	**11.7%**
Gazprom Neft	Russia ($)	11.0	5.1%	10.1%	9.2%	10.4%	10.5%	3.3%	10.8%	-4.6%	22.2%	32.4%	34.4%	**8.7%**	**6.9%**	**3.1%**	**19.0%**
Husky Energy	Canada (C$)	16.3	-	-	1.2%	1.9%	-1.3%	1.5%	0.7%	4.3%	4.3%	4.3%	6.0%	**0.8%**	**0.1%**	**2.5%**	**3.9%**
Imperial Oil	Canada (C$)	27.9	-	-	1.1%	-2.6%	-7.9%	-2.5%	-1.7%	2.3%	5.2%	4.1%	5.5%	**-3.0%**	**-5.2%**	**0.3%**	**3.1%**
Lukoil	Russia ($)	27.4	5.8%	15.2%	15.2%	13.8%	1.4%	2.3%	7.9%	5.2%	10.6%	14.5%	15.1%	**9.6%**	**1.8%**	**6.6%**	**10.7%**
MOL	Hungary (HUF)	4.8	5.6%	3.1%	5.7%	6.3%	22.6%	3.8%	3.1%	4.8%	2.6%	8.0%	11.9%	**8.3%**	**13.2%**	**3.9%**	**6.1%**
Novatek	Russia ($)	28.2	5.1%	3.1%	3.9%	3.0%	3.2%	4.1%	6.1%	9.6%	11.9%	12.2%	12.1%	**3.5%**	**3.6%**	**7.8%**	**10.4%**
OMV	Austria (€)	8.1	-6.4%	7.4%	1.7%	18.6%	11.6%	-1.7%	-2.8%	0.6%	4.1%	8.3%	6.6%	**7.5%**	**4.9%**	**-1.1%**	**3.4%**
Petrobras (PN)	Brazil (BrR)	31.6	-5.2%	-7.5%	-6.5%	-9.9%	-24.6%	-37.7%	-41.1%	-27.8%	-8.0%	6.4%	14.8%	**-17.3%**	**-31.2%**	**-34.5%**	**-11.1%**
PetroChina	China (Rmb)	238.2	-0.8%	1.1%	-1.8%	-7.8%	-4.8%	-1.0%	-6.7%	-2.2%	1.5%	3.5%	4.4%	**-2.9%**	**-2.9%**	**-4.5%**	**0.1%**
PTT Public Company	Thailand (Bt)	20.7	-9.0%	15.1%	5.2%	8.0%	12.1%	-1.0%	-11.6%	0.7%	0.9%	8.7%	11.8%	**7.9%**	**5.6%**	**-5.4%**	**2.1%**
Reliance Industries	India (INR)	36.9	2.4%	-1.2%	2.3%	4.9%	12.5%	-0.9%	-21.6%	-8.0%	8.5%	10.2%	15.9%	**3.5%**	**5.8%**	**-14.8%**	**1.0%**
Repsol	Spain (€)	18.4	0.2%	7.8%	2.1%	7.9%	3.9%	-1.6%	-57.9%	-4.2%	1.4%	3.6%	5.0%	**4.0%**	**1.1%**	**-31.0%**	**-10.4%**
Rosneft	Russia ($)	38.9	5.1%	8.8%	3.0%	2.1%	25.8%	42.4%	41.9%	26.7%	23.7%	23.6%	19.5%	**16.4%**	**34.1%**	**34.3%**	**27.1%**
Royal Dutch Shell	UK (p)	156.1	-0.2%	8.9%	5.9%	4.5%	3.1%	6.5%	3.6%	3.7%	6.5%	8.4%	9.9%	**5.8%**	**4.8%**	**3.6%**	**6.4%**
Sasol	S.Africa (Rd)	18.8	8.6%	1.8%	2.3%	1.7%	4.0%	2.9%	0.9%	-14.1%	-4.2%	3.0%	9.0%	**2.6%**	**3.5%**	**-6.6%**	**-1.1%**
Sinopec	China (Rmb)	89.5	3.0%	2.4%	-1.8%	0.8%	-7.2%	3.4%	5.7%	5.3%	7.7%	10.7%	11.2%	**-0.5%**	**-1.9%**	**5.5%**	**8.1%**
Statoil	Norway (Nkr)	46.3	7.0%	13.5%	6.7%	4.1%	-2.0%	-2.9%	-4.2%	-2.1%	4.2%	6.5%	9.0%	**3.9%**	**-2.4%**	**-3.1%**	**2.7%**
Suncor Energy	Canada (C$)	38.2	-	-	5.3%	3.8%	6.3%	3.2%	-0.8%	2.4%	5.8%	7.9%	10.2%	**4.7%**	**4.8%**	**0.8%**	**5.1%**
Surgutneftegaz	Russia ($)	22.4	11.3%	9.6%	12.4%	11.8%	15.1%	6.5%	6.8%	14.3%	12.4%	12.2%	9.9%	**11.1%**	**10.8%**	**10.5%**	**11.1%**
TOTAL	France ($)	102.1	1.8%	6.9%	6.4%	1.8%	-3.1%	-4.6%	-4.5%	-0.5%	4.6%	6.5%	6.8%	**1.5%**	**-3.8%**	**-2.5%**	**2.6%**
Global			**1.1%**	**4.0%**	**3.7%**	**1.8%**	**0.6%**	**1.3%**	**-2.2%**	**1.3%**	**5.6%**	**8.1%**	**9.3%**	**2.3%**	**1.0%**	**-0.5%**	**4.4%**
Big Five			**1.7%**	**5.2%**	**7.7%**	**4.3%**	**1.3%**	**1.7%**	**-0.9%**	**1.9%**	**5.6%**	**7.0%**	**7.9%**	**4.0%**	**1.5%**	**0.5%**	**4.3%**
US			**1.1%**	**7.0%**	**5.9%**	**4.1%**	**1.1%**	**1.2%**	**-1.9%**	**1.3%**	**4.9%**	**5.7%**	**6.6%**	**3.9%**	**1.2%**	**-0.3%**	**3.3%**
Europe			**1.7%**	**3.9%**	**6.4%**	**3.3%**	**0.4%**	**0.9%**	**-2.7%**	**2.0%**	**6.1%**	**8.4%**	**9.8%**	**3.0%**	**0.6%**	**-0.3%**	**4.7%**
EM			**0.7%**	**2.6%**	**0.2%**	**-1.4%**	**0.5%**	**1.7%**	**-2.2%**	**0.6%**	**5.7%**	**9.9%**	**11.3%**	**0.7%**	**1.1%**	**-0.8%**	**5.1%**

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	0.3%	2.4%	4.2%	0.9%	1.8%	1.3%	-2.0%	-0.6%	1.6%	1.4%	3.3%	**2.1%**	**1.6%**	**-1.3%**	**0.7%**
Apache Corp.	US ($)	16.1	3.8%	5.9%	6.2%	-0.5%	-6.4%	-10.6%	-13.3%	-5.6%	-4.0%	-4.3%	-2.9%	**-1.1%**	**-8.5%**	**-9.4%**	**-6.0%**
Cabot Oil & Gas	US ($)	9.4	0.1%	-10.2%	-6.1%	-3.4%	-1.2%	-1.7%	-2.0%	-0.8%	3.9%	6.0%	7.0%	**-4.5%**	**-1.4%**	**-1.4%**	**2.8%**
Canadian Natural	Canada (C$)	22.6	-	-	0.1%	0.3%	0.4%	-0.4%	-2.1%	1.7%	3.7%	10.4%	14.3%	**1.0%**	**0.0%**	**-0.2%**	**5.6%**
Chesapeake Energy	US ($)	4.8	-13.2%	-17.8%	-26.1%	-74.3%	-17.7%	-7.1%	-31.6%	-40.4%	-19.2%	-12.1%	-10.6%	**-28.6%**	**-12.4%**	**-36.0%**	**-22.8%**
CNOOC Ltd	China (Rmb)	50.8	2.1%	6.1%	12.1%	8.1%	6.9%	3.1%	-3.6%	9.7%	14.7%	13.8%	17.3%	**7.3%**	**5.0%**	**3.1%**	**10.4%**
Concho	US ($)	12.6	1.7%	0.2%	-1.5%	-0.7%	-2.6%	-4.8%	-4.6%	-0.1%	-0.6%	-0.5%	0.7%	**-1.9%**	**-3.7%**	**-2.4%**	**-1.0%**
ConocoPhillips	US ($)	58.2	14.5%	21.2%	11.2%	8.8%	6.9%	4.4%	-7.1%	0.0%	8.4%	8.0%	7.2%	**10.5%**	**5.6%**	**-3.5%**	**3.3%**
Continental	US ($)	11.5	-2.4%	-4.8%	-7.7%	-13.5%	-6.3%	-5.4%	-12.5%	-1.5%	4.0%	5.0%	5.8%	**-7.5%**	**-5.8%**	**-7.0%**	**0.1%**
Crescent Point	Canada (C$)	5.6	-	-	0.6%	0.3%	1.5%	1.7%	4.3%	5.3%	5.8%	5.3%	7.8%	**0.8%**	**1.6%**	**4.8%**	**5.7%**
Devon Energy	US ($)	16.5	36.0%	32.9%	-5.1%	-14.4%	-6.1%	-2.8%	-0.3%	-2.4%	2.0%	1.7%	4.1%	**0.9%**	**-4.5%**	**-1.4%**	**1.0%**
Encana	Canada (US$)	5.6	-	-	-264.8%	-242.8%	-3.1%	0.9%	-9.4%	-7.6%	2.4%	12.3%	15.3%	**-127.4%**	**-1.1%**	**-8.5%**	**2.6%**
EOG Resources	US ($)	42.2	-0.2%	-10.7%	-9.0%	-5.2%	0.9%	0.2%	-1.8%	-0.3%	1.1%	1.2%	1.9%	**-4.7%**	**0.5%**	**-1.1%**	**0.4%**
Hess Corp.	US ($)	16.2	3.5%	-1.0%	-2.2%	-1.3%	5.2%	1.3%	-12.9%	-6.1%	-2.2%	-0.2%	3.3%	**0.4%**	**3.2%**	**-9.5%**	**-3.6%**
Lundin Petroleum	Sweden ($)	3.9	-	-	-	-7.9%	-14.8%	-26.4%	-27.7%	-16.4%	-6.1%	-11.7%	-17.1%	**-16.4%**	**-20.6%**	**-22.0%**	**-15.8%**
Marathon Oil	US ($)	11.1	-7.0%	1.4%	10.1%	-1.7%	5.1%	-1.2%	-15.1%	-2.1%	6.0%	0.7%	7.3%	**2.7%**	**1.9%**	**-8.6%**	**-0.6%**
Murphy Oil	US ($)	4.9	-2.9%	-0.6%	0.1%	-11.7%	-7.2%	-5.8%	-22.1%	-11.3%	-1.6%	3.8%	33.3%	**-5.0%**	**-6.5%**	**-16.7%**	**0.4%**
Noble Energy	US ($)	13.2	4.3%	0.7%	-1.8%	-5.2%	-2.7%	-6.6%	10.8%	-0.8%	-5.8%	-7.7%	-11.5%	**-3.1%**	**-4.7%**	**5.0%**	**-3.0%**
Occidental Petroleum	US ($)	53.2	5.8%	6.2%	5.4%	2.4%	3.7%	-0.6%	-2.7%	1.4%	3.8%	4.4%	5.3%	**3.4%**	**1.5%**	**-0.7%**	**2.5%**
Oil & Natural Gas	India (INR)	28.9	13.7%	11.9%	10.9%	9.5%	4.4%	-10.5%	0.7%	4.0%	-2.3%	-3.0%	-2.1%	**5.3%**	**-3.1%**	**2.4%**	**-0.5%**
Pioneer Natural Res.	US ($)	17.7	-38.0%	1.8%	-2.7%	-7.1%	-1.9%	-2.8%	-1.9%	-6.8%	-4.1%	-1.7%	2.5%	**-2.6%**	**-2.4%**	**-4.4%**	**-2.4%**
PTT E&P (F)	Thailand (Bt)	8.1	-4.6%	-2.2%	3.0%	3.0%	-6.5%	1.6%	9.9%	2.7%	2.4%	13.5%	19.6%	**-0.2%**	**-2.5%**	**6.3%**	**9.6%**
Range Resources	US ($)	6.2	2.3%	-2.8%	-4.4%	-6.3%	-1.0%	-0.6%	-1.3%	-1.1%	3.0%	6.5%	9.7%	**-3.0%**	**-0.8%**	**-1.2%**	**3.3%**
Southwestern Energy	US ($)	5.9	-3.2%	-3.7%	-3.2%	-4.9%	-2.3%	1.7%	-9.5%	-4.6%	0.4%	2.1%	-0.3%	**-2.5%**	**-0.3%**	**-7.0%**	**-2.4%**
Tullow	UK ($)	2.8	-11.0%	-3.9%	-2.9%	-0.6%	-0.5%	-6.5%	-42.5%	-13.8%	-14.2%	-14.8%	-7.4%	**-2.9%**	**-3.5%**	**-28.1%**	**-18.5%**
Woodside Petroleum	Australia (A$)	17.4	-9.1%	-1.3%	0.1%	10.0%	12.8%	17.2%	6.1%	9.0%	15.5%	18.9%	18.1%	**7.8%**	**15.0%**	**7.5%**	**13.5%**
US			**5.3%**	**6.6%**	**-7.9%**	**-10.3%**	**0.3%**	**-1.0%**	**-4.9%**	**-1.7%**	**2.1%**	**3.0%**	**4.7%**	-2.4%	-0.3%	-3.3%	0.6%
International			**1.8%**	**5.0%**	**8.0%**	**6.9%**	**4.5%**	**0.6%**	**-1.4%**	**6.1%**	**8.1%**	**8.6%**	**10.8%**	5.0%	2.6%	2.4%	6.5%
Global			**4.4%**	**6.1%**	**-3.3%**	**-5.0%**	**1.5%**	**-0.6%**	**-4.0%**	**0.1%**	**3.5%**	**4.3%**	**6.1%**	-0.3%	0.4%	-1.9%	2.0%

Dividend yield ($)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	1.2%	1.2%	1.1%	1.3%	1.6%	1.5%	2.0%	2.4%	2.7%	3.1%	3.6%	**1.3%**	**1.5%**	**2.2%**	**2.8%**
BP	UK ($)	94.0	6.9%	0.9%	4.0%	4.8%	5.2%	5.1%	7.8%	7.9%	8.1%	8.2%	8.4%	**4.0%**	**5.1%**	**7.9%**	**8.1%**
Cenovus	Canada (C$)	11.3	-	-	2.2%	2.6%	3.0%	3.3%	4.7%	3.5%	3.5%	3.5%	3.5%	**2.8%**	**3.2%**	**4.1%**	**3.8%**
Chevron Corp.	US ($)	144.3	3.8%	3.6%	3.1%	3.3%	3.2%	3.5%	5.6%	5.7%	6.0%	6.3%	6.6%	**3.3%**	**3.4%**	**5.7%**	**6.0%**
Eni	Italy (€)	58.0	6.0%	6.1%	6.6%	6.3%	6.3%	6.3%	5.6%	5.7%	6.0%	6.1%	6.3%	**6.3%**	**6.3%**	**5.6%**	**5.9%**
ExxonMobil	US ($)	302.1	2.3%	2.7%	2.3%	2.5%	2.7%	2.8%	4.0%	4.2%	4.5%	4.9%	5.0%	**2.6%**	**2.7%**	**4.1%**	**4.5%**
GALP	Portugal (€)	8.3	1.9%	1.6%	1.4%	2.0%	2.4%	2.9%	4.7%	5.7%	5.7%	6.0%	7.1%	**2.0%**	**2.6%**	**5.2%**	**5.8%**
Gazprom	Russia ($)	49.6	1.5%	2.3%	4.6%	3.7%	5.4%	5.1%	6.0%	12.0%	14.3%	15.5%	15.4%	**4.2%**	**5.2%**	**9.0%**	**12.6%**
Gazprom Neft	Russia ($)	11.0	3.2%	3.6%	4.9%	5.9%	6.7%	3.0%	7.4%	9.8%	15.4%	17.5%	16.5%	**4.8%**	**4.8%**	**8.6%**	**13.3%**
Husky Energy	Canada (C$)	16.3	-	-	4.4%	4.7%	3.9%	3.5%	5.4%	5.4%	5.4%	5.4%	5.4%	**4.1%**	**3.7%**	**5.4%**	**5.4%**
Imperial Oil	Canada (C$)	27.9	-	-	1.0%	1.0%	1.1%	0.9%	1.2%	1.4%	1.5%	1.7%	1.7%	**1.0%**	**1.0%**	**1.3%**	**1.5%**
Lukoil	Russia ($)	27.4	3.4%	3.5%	4.2%	4.9%	5.5%	5.3%	7.1%	6.6%	7.4%	7.6%	8.3%	**4.7%**	**5.4%**	**6.8%**	**7.4%**
MOL	Hungary (HUF)	4.8	0.0%	0.0%	2.2%	2.5%	3.6%	3.9%	3.7%	3.8%	4.9%	5.6%	5.6%	**2.4%**	**3.8%**	**3.7%**	**4.7%**
Novatek	Russia ($)	28.2	2.2%	1.6%	1.5%	1.8%	2.0%	2.4%	2.5%	3.3%	4.0%	5.3%	6.5%	**1.9%**	**2.2%**	**2.9%**	**4.3%**
OMV	Austria (€)	8.1	3.9%	3.6%	3.9%	4.6%	3.6%	4.2%	5.7%	5.7%	5.7%	5.7%	5.7%	**4.0%**	**3.9%**	**5.7%**	**5.7%**
Petrobras (PN)	Brazil (BrR)	31.6	2.9%	3.0%	3.4%	4.4%	5.2%	0.0%	12.6%	11.5%	11.5%	11.2%	12.4%	**3.2%**	**2.6%**	**12.0%**	**11.8%**
PetroChina	China (Rmb)	238.2	3.5%	4.3%	3.8%	3.3%	4.3%	3.6%	2.5%	2.4%	4.4%	5.6%	6.7%	**3.9%**	**3.9%**	**2.4%**	**4.3%**
PTT Public Company	Thailand (Bt)	20.7	3.9%	3.6%	4.4%	3.6%	4.0%	4.4%	4.5%	4.9%	5.4%	5.8%	5.8%	**4.0%**	**4.2%**	**4.7%**	**5.3%**
Reliance Industries	India (INR)	36.9	0.8%	0.7%	0.7%	1.0%	1.3%	1.1%	1.0%	1.3%	1.5%	1.8%	2.0%	**1.0%**	**1.2%**	**1.2%**	**1.5%**
Repsol	Spain (€)	18.4	5.3%	5.7%	5.2%	6.0%	5.7%	10.9%	8.6%	8.8%	9.1%	9.4%	9.7%	**6.7%**	**8.3%**	**8.7%**	**9.1%**
Rosneft	Russia ($)	38.9	1.2%	1.3%	3.3%	3.7%	5.3%	2.4%	3.9%	4.6%	7.5%	8.1%	9.5%	**3.2%**	**3.9%**	**4.3%**	**6.7%**
Royal Dutch Shell	UK (p)	156.1	6.4%	5.8%	4.8%	5.0%	5.4%	5.0%	7.7%	7.7%	7.7%	7.9%	8.0%	**5.2%**	**5.2%**	**7.7%**	**7.8%**
Sasol	S.Africa (Rd)	18.8	3.1%	3.6%	4.0%	4.6%	4.4%	4.0%	2.8%	1.8%	3.2%	4.0%	4.3%	**4.1%**	**4.2%**	**2.3%**	**3.2%**
Sinopec	China (Rmb)	89.5	2.6%	2.9%	3.6%	3.6%	4.8%	3.6%	3.8%	4.3%	6.2%	7.3%	8.1%	**3.7%**	**4.2%**	**4.0%**	**5.9%**
Statoil	Norway (Nkr)	46.3	4.6%	4.7%	4.7%	4.6%	5.1%	4.2%	6.2%	6.0%	6.1%	6.3%	6.4%	**4.7%**	**4.7%**	**6.1%**	**6.2%**
Suncor Energy	Canada (C$)	38.2	-	-	1.1%	1.6%	2.1%	2.4%	3.2%	3.3%	3.7%	4.2%	4.8%	**1.8%**	**2.3%**	**3.3%**	**3.9%**
Surgutneftegaz	Russia ($)	22.4	1.9%	1.7%	2.1%	1.8%	2.2%	2.4%	4.6%	2.0%	2.5%	2.0%	2.9%	**2.1%**	**2.3%**	**3.3%**	**2.8%**
TOTAL	France ($)	102.1	5.7%	5.7%	5.9%	6.1%	5.9%	3.8%	6.2%	6.2%	6.3%	6.4%	6.5%	**5.5%**	**4.9%**	**6.2%**	**6.3%**
Global			**3.7%**	**3.4%**	**3.5%**	**3.7%**	**4.1%**	**3.6%**	**4.8%**	**5.1%**	**5.8%**	**6.3%**	**6.7%**	**3.7%**	**3.9%**	**5.0%**	**5.8%**
Big Five			**4.5%**	**3.6%**	**3.6%**	**3.8%**	**4.0%**	**3.8%**	**5.7%**	**5.8%**	**6.0%**	**6.3%**	**6.5%**	**3.8%**	**3.9%**	**5.8%**	**6.1%**
US			**2.8%**	**3.0%**	**2.4%**	**2.7%**	**2.8%**	**2.9%**	**4.3%**	**4.4%**	**4.7%**	**5.1%**	**5.2%**	**2.8%**	**2.9%**	**4.3%**	**4.7%**
Europe			**5.5%**	**4.1%**	**4.6%**	**4.8%**	**5.1%**	**4.8%**	**6.5%**	**6.6%**	**6.7%**	**6.9%**	**7.1%**	**4.7%**	**4.9%**	**6.5%**	**6.7%**
EM			**2.7%**	**3.0%**	**3.5%**	**3.5%**	**4.4%**	**3.2%**	**3.9%**	**4.4%**	**6.1%**	**7.0%**	**7.8%**	**3.5%**	**3.8%**	**4.1%**	**5.8%**

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	0.7%	0.6%	0.5%	0.5%	0.6%	1.1%	1.6%	1.7%	1.7%	1.8%	1.9%	**0.7%**	**0.8%**	**1.6%**	**1.7%**
Apache Corp.	US ($)	16.1	0.8%	0.6%	0.7%	1.0%	1.1%	1.1%	2.3%	2.4%	2.5%	2.6%	2.7%	**0.9%**	**1.1%**	**2.3%**	**2.5%**
Cabot Oil & Gas	US ($)	9.4	0.4%	0.3%	0.2%	0.2%	0.2%	0.2%	0.4%	0.4%	0.4%	0.4%	0.5%	**0.2%**	**0.2%**	**0.4%**	**0.4%**
Canadian Natural	Canada (C$)	22.6	-	-	0.8%	1.3%	1.8%	2.0%	3.3%	3.4%	3.4%	3.4%	3.4%	**1.3%**	**1.9%**	**3.4%**	**3.4%**
Chesapeake Energy	US ($)	4.8	1.4%	1.4%	1.2%	1.9%	1.6%	1.4%	2.5%	-	-	-	-	**1.5%**	**1.5%**	**2.5%**	**2.5%**
CNOOC Ltd	China (Rmb)	50.8	4.6%	3.7%	3.8%	3.7%	4.8%	5.5%	4.6%	2.2%	4.1%	4.9%	5.9%	**4.3%**	**5.1%**	**3.4%**	**4.4%**
Concho	US ($)	12.6	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
ConocoPhillips	US ($)	58.2	5.5%	5.1%	4.8%	4.7%	4.2%	3.8%	6.2%	6.4%	6.8%	7.1%	7.5%	**4.5%**	**4.0%**	**6.3%**	**6.8%**
Continental	US ($)	11.5	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
Crescent Point	Canada (C$)	5.6	-	-	6.2%	6.7%	6.9%	6.5%	13.5%	7.2%	7.2%	7.2%	7.2%	**6.7%**	**6.7%**	**10.4%**	**8.5%**
Devon Energy	US ($)	16.5	1.1%	1.0%	0.9%	1.3%	1.5%	1.4%	2.4%	2.6%	2.7%	2.8%	2.9%	**1.2%**	**1.4%**	**2.5%**	**2.7%**
Encana	Canada (US$)	5.6	-	-	2.9%	3.9%	3.7%	1.4%	4.1%	4.1%	4.1%	4.1%	4.1%	**2.9%**	**2.5%**	**4.1%**	**4.1%**
EOG Resources	US ($)	42.2	0.8%	0.6%	0.6%	0.6%	0.5%	0.5%	0.9%	0.9%	1.0%	1.0%	1.0%	**0.6%**	**0.5%**	**0.9%**	**1.0%**
Hess Corp.	US ($)	16.2	0.7%	0.7%	0.6%	0.8%	1.0%	1.1%	1.8%	1.8%	1.8%	1.8%	1.8%	**0.8%**	**1.1%**	**1.8%**	**1.8%**
Lundin Petroleum	Sweden ($)	3.9	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
Marathon Oil	US ($)	11.1	5.3%	5.0%	2.1%	2.3%	2.1%	2.3%	5.1%	5.3%	5.6%	5.8%	6.0%	**2.8%**	**2.2%**	**5.2%**	**5.6%**
Murphy Oil	US ($)	4.9	2.2%	2.1%	2.0%	7.7%	2.2%	2.2%	4.9%	5.2%	5.2%	5.4%	5.6%	**3.3%**	**2.2%**	**5.0%**	**5.3%**
Noble Energy	US ($)	13.2	1.2%	1.0%	0.9%	1.0%	0.9%	1.0%	2.4%	2.4%	2.7%	3.0%	3.4%	**1.0%**	**1.0%**	**2.4%**	**2.8%**
Occidental Petroleum	US ($)	53.2	1.9%	1.7%	1.8%	3.0%	2.2%	3.0%	4.2%	4.8%	5.5%	6.0%	6.6%	**2.3%**	**2.6%**	**4.5%**	**5.4%**
Oil & Natural Gas	India (INR)	28.9	3.4%	3.2%	2.9%	3.3%	3.3%	3.2%	2.5%	3.1%	3.3%	3.4%	3.1%	**3.2%**	**3.3%**	**2.8%**	**3.1%**
Pioneer Natural Res.	US ($)	17.7	0.3%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	**0.1%**	**0.0%**	**0.1%**	**0.1%**
PTT E&P (F)	Thailand (Bt)	8.1	5.0%	2.3%	3.0%	3.3%	3.6%	3.9%	3.6%	2.9%	4.1%	4.1%	4.9%	**3.2%**	**3.8%**	**3.2%**	**3.9%**
Range Resources	US ($)	6.2	0.4%	0.4%	0.3%	0.3%	0.2%	0.2%	0.4%	0.4%	0.4%	0.4%	0.4%	**0.3%**	**0.2%**	**0.4%**	**0.4%**
Southwestern Energy	US ($)	5.9	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
Tullow	UK ($)	2.8	0.6%	0.5%	0.9%	1.3%	1.8%	0.9%	-	-	-	-	-	**1.1%**	**1.4%**	**-**	**-**
Woodside Petroleum	Australia (A$)	17.4	2.7%	2.6%	2.7%	3.7%	6.9%	7.1%	4.8%	3.3%	5.5%	7.0%	7.2%	**4.6%**	**7.0%**	**4.0%**	**5.6%**
US			**2.4%**	**2.2%**	**2.0%**	**2.4%**	**1.9%**	**2.0%**	**3.2%**	**3.3%**	**3.5%**	**3.7%**	**3.9%**	**2.1%**	**1.9%**	**3.3%**	**3.5%**
International			**3.7%**	**3.0%**	**3.1%**	**3.3%**	**4.4%**	**4.8%**	**3.7%**	**2.7%**	**4.1%**	**4.7%**	**5.3%**	**3.7%**	**4.6%**	**3.2%**	**4.1%**
Global			**2.8%**	**2.5%**	**2.3%**	**2.7%**	**2.6%**	**2.6%**	**3.4%**	**3.1%**	**3.7%**	**4.0%**	**4.2%**	**2.5%**	**2.6%**	**3.3%**	**3.7%**

Capex (US$m)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	6,933	8,397	10,300	9,974	10,605	8,510	5,683	6,016	5,955	5,960	6,427	4%	-8%	-16%	-5%
BP	UK ($)	94.0	20,650	18,421	20,108	23,078	24,520	22,546	19,292	17,613	16,945	17,124	17,511	2%	-1%	-12%	-5%
Cenovus	Canada (C$)	11.3	1,895	2,060	2,723	3,369	3,262	3,051	1,884	1,590	1,941	2,289	2,276	10%	-5%	-28%	-6%
Chevron Corp.	US ($)	144.3	22,237	21,755	29,066	34,229	41,877	40,316	35,000	31,134	28,163	29,263	30,049	13%	9%	-12%	-6%
Eni	Italy (€)	58.0	19,105	18,305	18,708	17,377	16,930	16,271	13,810	12,655	12,610	13,382	13,540	-3%	-3%	-12%	-4%
ExxonMobil	US ($)	302.1	27,092	32,226	36,766	39,799	42,489	38,537	32,845	31,708	31,566	31,432	31,568	7%	-2%	-9%	-4%
GALP	Portugal (€)	8.3	1,018	1,627	1,378	1,209	1,280	1,518	1,476	1,628	1,696	1,788	1,810	8%	12%	4%	4%
Gazprom	Russia ($)	49.6	26,514	36,386	54,843	45,247	45,882	35,695	27,642	31,570	30,653	26,378	27,109	6%	-11%	-6%	-5%
Gazprom Neft	Russia ($)	11.0	2,607	3,301	4,029	5,074	6,527	7,012	5,120	5,330	4,991	5,256	4,927	22%	18%	-13%	-7%
Husky Energy	Canada (C$)	16.3	2,436	3,741	4,854	4,701	5,028	5,091	3,077	3,030	3,873	4,125	3,942	16%	4%	-23%	-5%
Imperial Oil	Canada (C$)	27.9	1,797	3,745	4,095	5,667	6,289	5,587	3,568	2,991	3,236	3,788	3,971	25%	-1%	-27%	-7%
Lukoil	Russia ($)	27.4	6,523	6,611	8,255	12,568	15,806	14,643	10,921	9,716	11,775	12,124	13,181	18%	8%	-19%	-2%
MOL	Hungary (HUF)	4.8	1,516	1,466	1,125	1,297	1,120	1,458	1,300	1,500	1,650	1,750	1,800	-1%	6%	1%	4%
Novatek	Russia ($)	28.2	515	705	859	1,198	1,604	1,465	782	432	429	430	442	23%	11%	-46%	-21%
OMV	Austria (€)	8.1	2,930	2,755	3,428	3,194	3,729	5,096	3,124	3,112	3,278	3,511	3,682	12%	26%	-22%	-6%
Petrobras (PN)	Brazil (BrR)	31.6	35,499	43,412	43,330	42,847	47,856	36,866	27,191	24,184	25,008	24,436	23,900	1%	-7%	-19%	-8%
PetroChina	China (Rmb)	238.2	37,642	38,286	41,482	49,444	49,447	47,346	41,563	35,967	36,894	35,934	37,838	5%	-2%	-13%	-4%
PTT Public Company	Thailand (Bt)	20.7	5,341	3,402	4,842	3,674	4,370	4,783	4,252	4,436	5,379	4,333	4,333	-2%	14%	-4%	-2%
Reliance Industries	India (INR)	36.9	6,764	4,897	5,718	93	93	9,555	17,021	7,206	4,741	3,701	2,960	7%	913%	-13%	-21%
Repsol	Spain (€)	18.4	6,333	6,466	8,062	4,730	4,808	3,464	14,643	5,718	5,854	6,056	6,199	-11%	-14%	28%	12%
Rosneft	Russia ($)	38.9	7,348	9,071	13,500	15,136	17,966	14,606	10,203	12,258	13,638	13,254	12,820	15%	-2%	-8%	-3%
Royal Dutch Shell	UK (p)	156.1	28,611	19,840	27,520	32,070	34,683	33,280	27,937	27,740	29,333	29,050	29,792	3%	2%	-9%	-2%
Sasol	S.Africa (Rd)	18.8	1,758	2,125	2,954	3,761	3,660	3,788	4,201	4,541	3,310	2,425	1,955	17%	0%	9%	-12%
Sinopec	China (Rmb)	89.5	16,506	17,090	20,152	25,194	30,102	24,742	21,234	18,853	20,516	21,384	23,155	8%	-1%	-13%	-1%
Statoil	Norway (Nkr)	46.3	11,948	12,800	16,424	19,315	19,275	19,083	16,854	15,204	14,677	14,550	14,197	10%	-1%	-11%	-6%
Suncor Energy	Canada (C$)	38.2	4,827	6,007	6,800	6,959	6,777	6,961	6,026	5,932	5,363	4,302	4,684	8%	0%	-8%	-8%
Surgutneftegaz	Russia ($)	22.4	3,924	4,578	5,846	5,974	5,800	5,116	3,962	4,140	5,170	5,533	5,400	5%	-7%	-10%	1%
TOTAL	France ($)	102.1	19,548	16,860	21,885	25,437	29,918	27,969	24,223	20,028	19,620	20,093	21,407	7%	5%	-15%	-5%
Global			**329,814**	**346,335**	**419,053**	**442,615**	**481,705**	**444,357**	**384,834**	**346,231**	**348,266**	**343,651**	**350,877**	6%	0%	-12%	-5%
Big Five			**118,138**	**109,102**	**135,345**	**154,613**	**173,487**	**162,648**	**139,297**	**128,222**	**125,627**	**126,962**	**130,326**	7%	3%	-11%	-4%
US			**60,284**	**69,534**	**84,304**	**94,724**	**105,722**	**99,543**	**82,400**	**76,385**	**74,142**	**75,198**	**76,491**	11%	3%	-12%	-5%
Europe			**118,590**	**106,937**	**128,938**	**137,681**	**146,869**	**139,195**	**128,341**	**111,213**	**111,619**	**113,264**	**116,365**	3%	1%	-11%	-4%
EM			**150,939**	**169,865**	**205,811**	**210,211**	**229,113**	**205,618**	**174,092**	**158,633**	**162,504**	**155,189**	**158,021**	6%	-1%	-12%	-5%

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	4,352	5,008	5,650	7,242	7,721	9,508	6,300	5,700	6,950	8,200	8,575	17%	15%	-23%	-2%
Apache Corp.	US ($)	16.1	3,631	4,922	7,078	9,531	11,220	10,880	4,950	4,000	5,000	5,500	6,000	25%	7%	-39%	-11%
Cabot Oil & Gas	US ($)	9.4	611	857	891	935	1,242	1,490	1,015	1,100	1,485	1,782	2,138	20%	26%	-14%	7%
Canadian Natural	Canada (C$)	22.6	-	-	6,183	6,104	7,067	8,652	5,500	5,330	6,969	6,514	6,699	19%	19%	-22%	-5%
Chesapeake Energy	US ($)	4.8	5,266	6,733	9,801	12,199	6,439	5,290	3,406	2,700	2,700	2,900	3,100	0%	-34%	-29%	-10%
CNOOC Ltd	China (Rmb)	50.8	6,248	5,641	6,424	9,193	14,780	17,136	12,031	11,499	12,837	13,276	13,835	22%	37%	-18%	-4%
Concho	US ($)	12.6	408	691	1,380	1,505	1,880	2,589	2,184	1,734	1,989	2,380	2,662	45%	31%	-18%	1%
ConocoPhillips	US ($)	58.2	9,033	8,675	12,225	14,789	15,537	17,085	11,190	10,490	10,490	13,190	15,190	14%	7%	-22%	-2%
Continental	US ($)	11.5	497	1,031	1,926	3,494	3,661	4,604	2,987	2,100	2,625	3,150	3,780	56%	15%	-32%	-4%
Crescent Point	Canada (C$)	5.6	-	-	1,252	1,509	1,747	2,169	1,526	1,469	1,585	1,739	1,907	44%	20%	-18%	-3%
Devon Energy	US ($)	16.5	4,879	6,476	7,534	8,225	6,758	6,988	5,224	3,085	4,000	5,000	5,500	7%	-8%	-34%	-5%
Encana	Canada (US$)	5.6	-	-	4,578	3,476	2,712	2,526	2,055	1,814	2,046	2,274	3,173	-	-15%	-15%	5%
EOG Resources	US ($)	42.2	3,503	5,791	6,951	7,355	7,061	8,247	4,850	4,400	5,500	6,600	7,590	19%	6%	-27%	-2%
Hess Corp.	US ($)	16.2	2,918	5,492	5,660	7,528	5,840	5,274	4,100	3,500	4,140	4,524	4,524	13%	-16%	-19%	-3%
Lundin Petroleum	Sweden ($)	3.9	-	-	-	929	1,738	2,083	1,750	1,367	1,243	1,175	1,148	-	50%	-19%	-11%
Marathon Oil	US ($)	11.1	6,231	4,762	3,295	4,940	4,766	5,181	3,604	2,663	3,068	4,000	4,605	-4%	2%	-28%	-2%
Murphy Oil	US ($)	4.9	2,206	2,448	2,944	4,335	4,087	3,845	2,302	2,052	2,052	2,052	2,052	12%	-6%	-27%	-12%
Noble Energy	US ($)	13.2	1,268	1,885	2,594	3,650	3,947	4,871	3,323	2,500	3,950	5,000	6,550	31%	16%	-28%	6%
Occidental Petroleum	US ($)	53.2	3,580	4,176	7,518	10,226	9,037	10,433	5,795	4,500	5,220	5,918	6,663	24%	1%	-34%	-9%
Oil & Natural Gas	India (INR)	28.9	6,665	3,983	5,437	5,479	7,190	4,396	4,510	8,908	9,359	9,827	10,102	-8%	-10%	42%	18%
Pioneer Natural Res.	US ($)	17.7	437	1,011	1,927	2,758	2,639	3,243	1,950	3,050	3,050	3,500	3,850	49%	8%	-3%	3%
PTT E&P (F)	Thailand (Bt)	8.1	1,790	2,419	2,228	4,115	4,807	3,102	2,744	2,468	2,370	2,052	2,052	12%	-13%	-11%	-8%
Range Resources	US ($)	6.2	541	817	1,200	1,499	1,159	1,200	825	750	1,013	1,316	1,645	17%	-11%	-21%	7%
Southwestern Energy	US ($)	5.9	1,780	2,073	2,184	2,108	2,253	2,043	1,875	1,700	2,100	2,600	3,000	3%	-2%	-9%	8%
Tullow	UK ($)	2.8	1,351	1,313	1,654	1,849	2,009	2,353	1,900	1,300	1,600	1,800	1,800	12%	13%	-26%	-5%
Woodside Petroleum	Australia (A$)	17.4	4,769	3,649	3,584	1,914	710	697	2,394	1,470	1,228	1,121	1,323	-32%	-40%	45%	14%
US			**51,143**	**62,850**	**92,771**	**113,407**	**106,771**	**116,118**	**74,961**	**64,638**	**75,933**	**88,139**	**99,204**	**16%**	**1%**	**-25%**	**-3%**
International			**20,823**	**17,005**	**19,327**	**23,479**	**31,235**	**29,768**	**25,328**	**27,012**	**28,637**	**29,250**	**30,261**	**7%**	**13%**	**-5%**	**0%**
Global			**71,966**	**79,855**	**112,098**	**136,886**	**138,006**	**145,886**	**100,289**	**91,649**	**104,570**	**117,389**	**129,465**	**14%**	**3%**	**-21%**	**-2%**

Capital intensity (US$/bbl)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	32.6	38.0	43.9	45.2	53.0	44.4	23.7	20.5	18.3	17.7	18.2	6%	-1%	-32%	-16%
BP	UK ($)	94.0	10.2	9.7	19.1	14.7	16.2	17.2	13.9	12.4	11.8	11.8	12.0	11%	8%	-15%	-7%
Cenovus	Canada (C$)	11.3	-10.2	-14.7	24.8	31.7	31.5	27.2	15.5	12.5	15.1	16.9	16.1	-222%	-7%	-32%	-10%
Chevron Corp.	US ($)	144.3	17.3	18.7	26.5	32.0	39.9	39.6	33.2	25.6	21.2	21.6	22.1	18%	11%	-19%	-11%
Eni	Italy (€)	58.0	20.5	19.3	22.8	21.3	23.5	24.0	18.8	17.0	17.0	17.2	17.3	3%	6%	-16%	-6%
ExxonMobil	US ($)	302.1	14.4	16.8	20.1	23.3	25.1	22.6	18.3	17.4	15.8	15.6	15.7	9%	-2%	-12%	-7%
GALP	Portugal (€)	8.3	76.0	104.4	99.9	125.5	126.3	134.5	86.6	66.7	48.2	39.3	30.8	12%	4%	-30%	-26%
Gazprom	Russia ($)	49.6	3.0	2.9	3.1	3.2	4.4	3.9	3.5	3.8	2.9	3.2	3.1	5%	10%	-1%	-4%
Gazprom Neft	Russia ($)	11.0	5.6	6.2	5.6	6.7	9.8	10.2	7.1	5.8	5.9	0.0	6.3	13%	24%	-25%	-9%
Husky Energy	Canada (C$)	16.3	-18.3	-29.4	37.9	37.3	37.5	34.5	18.1	16.0	20.8	21.3	20.5	-214%	-4%	-32%	-10%
Imperial Oil	Canada (C$)	27.9	0.0	0.0	35.8	53.7	56.1	43.4	22.0	16.4	17.5	19.8	20.1	-	-10%	-39%	-14%
Lukoil	Russia ($)	27.4	8.1	8.1	10.7	16.2	20.1	17.5	12.6	11.9	13.3	13.4	14.2	17%	4%	-18%	-4%
MOL	Hungary (HUF)	4.8	23.4	11.3	10.2	14.3	13.5	18.7	15.5	17.1	18.0	17.0	16.8	-4%	14%	-4%	-2%
Novatek	Russia ($)	28.2	2.6	3.2	3.7	3.5	4.3	3.7	1.8	0.8	0.7	0.7	0.7	7%	3%	-54%	-28%
OMV	Austria (€)	8.1	18.3	17.4	33.9	24.1	32.0	34.7	20.3	22.0	20.8	22.6	22.9	14%	20%	-21%	-8%
Petrobras (PN)	Brazil (BrR)	31.6	16.8	19.5	21.5	23.1	29.9	25.1	21.1	19.3	18.3	16.9	15.5	8%	4%	-12%	-9%
PetroChina	China (Rmb)	238.2	7.0	9.1	10.6	12.3	13.4	14.6	14.0	14.0	14.3	14.6	14.9	16%	9%	-2%	0%
PTT Public Company	Thailand (Bt)	20.7	22.4	28.4	23.1	42.7	47.7	29.0	23.6	19.0	18.5	16.6	17.4	5%	-18%	-19%	-10%
Reliance Industries	India (INR)	36.9	-	62.3	17.8	3.3	3.8	17.2	29.4	18.8	17.1	17.9	9.0	-	128%	5%	-12%
Repsol	Spain (€)	18.4	4.4	4.6	8.7	25.7	24.3	29.2	65.6	18.9	18.2	18.0	18.2	46%	7%	-20%	-9%
Rosneft	Russia ($)	38.9	6.7	6.9	8.7	8.8	6.6	5.0	3.7	4.3	4.8	5.0	4.4	-6%	-25%	-7%	-2%
Royal Dutch Shell	UK (p)	156.1	22.3	17.1	17.4	23.1	26.1	22.7	23.7	22.1	22.6	22.8	22.9	0%	-1%	-1%	0%
Sasol	S.Africa (Rd)	18.8	6.0	5.1	9.6	19.0	15.8	13.2	7.1	6.6	6.8	4.6	4.6	17%	-17%	-29%	-19%
Sinopec	China (Rmb)	89.5	21.1	19.7	22.3	29.0	38.7	26.7	22.4	17.9	20.1	20.5	23.1	5%	-4%	-18%	-3%
Statoil	Norway (Nkr)	46.3	17.9	18.8	37.2	27.0	28.7	29.3	25.3	23.7	22.4	22.2	22.0	10%	4%	-10%	-6%
Suncor Energy	Canada (C$)	38.2	0.0	0.0	26.2	27.1	24.7	25.0	19.9	19.5	16.0	11.4	11.3	-	-4%	-12%	-15%
Surgutneftegaz	Russia ($)	22.4	7.5	8.8	11.2	11.5	11.1	10.1	7.8	8.2	10.3	11.1	11.0	6%	-6%	-10%	2%
TOTAL	France ($)	102.1	13.3	15.1	25.3	23.4	26.7	20.2	22.3	16.9	17.0	17.2	16.9	9%	-7%	-9%	-3%
Global			**11.0**	**11.2**	**15.7**	**17.0**	**18.8**	**17.1**	**14.9**	**13.1**	**12.7**	**12.6**	**12.7**	**9%**	**0%**	**-13%**	**-6%**
Big Five			**15.2**	**15.3**	**21.2**	**22.9**	**26.2**	**24.0**	**21.6**	**18.7**	**17.5**	**17.6**	**17.7**	**10%**	**2%**	**-12%**	**-6%**
US			**11.8**	**13.3**	**23.9**	**28.1**	**31.5**	**29.6**	**23.1**	**20.0**	**17.8**	**17.8**	**17.9**	**20%**	**3%**	**-18%**	**-10%**
Europe			**16.3**	**15.5**	**23.1**	**22.6**	**25.3**	**23.6**	**22.5**	**18.5**	**18.1**	**18.1**	**18.1**	**8%**	**2%**	**-12%**	**-5%**
EM			**7.4**	**8.0**	**9.0**	**10.4**	**12.0**	**10.6**	**8.9**	**8.4**	**8.5**	**8.3**	**8.6**	**7%**	**1%**	**-11%**	**-4%**

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	19.8	21.3	22.8	27.1	27.1	30.9	20.7	18.9	22.1	24.9	24.9	9%	7%	-22%	-4%
Apache Corp.	US ($)	16.1	17.1	20.5	25.9	33.6	40.5	46.1	24.1	20.2	24.6	26.0	27.3	22%	17%	-34%	-10%
Cabot Oil & Gas	US ($)	9.4	35.6	39.4	28.5	21.0	18.0	16.8	9.9	9.8	10.7	10.7	10.8	-14%	-11%	-24%	-9%
Canadian Natural	Canada (C$)	22.6	-	-	31.1	25.8	28.9	33.6	22.3	22.4	29.4	27.3	27.5	7%	14%	-18%	-4%
Chesapeake Energy	US ($)	4.8	34.9	39.0	49.3	51.6	26.3	20.5	13.8	11.3	11.4	12.2	12.7	-10%	-37%	-26%	-9%
CNOOC Ltd	China (Rmb)	50.8	27.7	17.3	19.5	26.5	36.1	39.9	24.8	23.2	25.8	26.9	26.7	8%	23%	-24%	-8%
Concho	US ($)	12.6	37.3	44.8	58.7	50.7	55.9	63.3	42.0	30.9	32.2	35.1	35.6	11%	12%	-30%	-11%
ConocoPhillips	US ($)	58.2	13.5	13.7	20.7	25.7	28.4	30.4	19.4	17.4	16.8	20.6	23.8	18%	9%	-24%	-5%
Continental	US ($)	11.5	36.5	65.2	85.3	98.1	73.8	72.4	37.9	25.2	29.4	32.4	35.2	15%	-14%	-41%	-13%
Crescent Point	Canada (C$)	5.6	-	-	5.2	6.0	6.9	8.8	6.2	6.0	6.3	6.6	7.0	44%	21%	-18%	-5%
Devon Energy	US ($)	16.5	19.9	28.5	31.4	32.9	26.7	28.4	21.3	12.6	15.8	19.1	20.1	7%	-7%	-33%	-7%
Encana	Canada (US$)	5.6	-	-	21.6	18.0	14.4	14.5	13.5	12.7	13.6	14.2	17.3	-	-10%	-6%	4%
EOG Resources	US ($)	42.2	27.2	41.1	45.0	43.2	37.9	38.0	23.0	20.2	23.9	26.8	28.6	7%	-6%	-27%	-6%
Hess Corp.	US ($)	16.2	19.6	36.0	41.9	50.8	47.5	43.9	30.2	25.8	29.3	29.8	29.0	17%	-7%	-23%	-8%
Lundin Petroleum	Sweden ($)	3.9	-	-	-	71.3	145.5	228.3	152.7	50.2	44.0	47.6	55.3	-	79%	-53%	-25%
Marathon Oil	US ($)	11.1	39.6	31.1	22.2	28.2	26.6	32.7	22.8	17.1	19.3	23.6	25.8	-4%	8%	-28%	-5%
Murphy Oil	US ($)	4.9	38.7	35.5	45.4	60.8	54.2	46.9	31.0	29.5	29.3	29.2	29.0	4%	-12%	-21%	-9%
Noble Energy	US ($)	13.2	16.5	23.9	32.0	41.5	39.6	44.8	26.6	17.4	25.3	27.9	31.1	22%	4%	-38%	-7%
Occidental Petroleum	US ($)	53.2	13.7	15.4	28.2	36.7	32.5	40.0	23.9	17.5	19.6	21.2	22.8	24%	4%	-34%	-11%
Oil & Natural Gas	India (INR)	28.9	16.1	9.7	13.4	13.2	17.6	11.3	11.5	22.2	22.4	23.2	23.6	-7%	-8%	40%	16%
Pioneer Natural Res.	US ($)	17.7	10.4	24.4	42.7	49.0	42.3	47.9	26.6	36.2	31.4	31.2	29.8	36%	-1%	-13%	-9%
PTT E&P (F)	Thailand (Bt)	8.1	21.0	25.1	23.1	40.9	45.0	26.4	22.7	19.9	19.7	17.5	17.0	5%	-20%	-13%	-8%
Range Resources	US ($)	6.2	20.4	27.1	35.6	32.7	20.3	17.0	9.7	7.5	8.4	9.1	9.5	-4%	-28%	-34%	-11%
Southwestern Energy	US ($)	5.9	35.5	30.7	26.2	22.4	20.6	15.9	11.5	9.4	10.4	11.5	12.0	-15%	-16%	-23%	-6%
Tullow	UK ($)	2.8	63.5	62.1	57.9	64.0	67.3	85.7	70.4	37.6	39.1	40.7	39.6	6%	16%	-34%	-14%
Woodside Petroleum	Australia (A$)	17.4	62.5	50.9	55.5	22.6	8.2	7.3	27.0	16.7	14.1	12.6	15.9	-35%	-43%	51%	17%
US			**20.6**	**24.5**	**29.9**	**34.2**	**31.3**	**32.9**	**20.8**	**17.5**	**19.5**	**21.1**	**21.8**	**12%**	**-2%**	**-27%**	**-8%**
International			**25.3**	**18.4**	**20.9**	**23.7**	**29.7**	**27.9**	**22.5**	**23.1**	**24.1**	**24.6**	**24.9**	**2%**	**8%**	**-9%**	**-2%**
Global			**21.7**	**23.0**	**27.9**	**31.8**	**30.9**	**31.7**	**21.2**	**18.8**	**20.5**	**21.9**	**22.5**	**9%**	**0%**	**-23%**	**-7%**

Oil and gas production – 000 boe/d

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	644	646	641	655	633	606	694	806	890	923	968	-1%	-4%	15%	10%
BP	UK ($)	94.0	3,998	3,822	3,453	3,331	3,231	3,152	3,244	3,268	3,268	3,295	3,339	-5%	-3%	2%	1%
Cenovus	Canada (C$)	11.3	257	252	243	264	268	285	280	284	310	334	347	2%	4%	0%	4%
Chevron Corp.	US ($)	144.3	2,704	2,763	2,673	2,610	2,597	2,571	2,605	2,852	3,015	3,096	3,139	-1%	-1%	5%	4%
Eni	Italy (€)	58.0	1,769	1,815	1,581	1,701	1,619	1,598	1,732	1,727	1,724	1,825	1,825	-2%	-3%	4%	3%
ExxonMobil	US ($)	302.1	3,932	4,446	4,505	4,239	4,175	3,968	4,090	4,132	4,255	4,298	4,310	0%	-3%	2%	2%
GALP	Portugal (€)	8.3	10	12	11	18	21	27	42	60	87	113	146	23%	22%	49%	40%
Gazprom	Russia ($)	49.6	8,700	9,557	9,726	9,362	9,472	8,794	8,665	8,671	8,760	8,709	8,881	0%	-3%	-1%	0%
Gazprom Neft	Russia ($)	11.0	1,006	1,067	1,155	1,198	1,254	1,334	1,560	1,711	1,787	1,810	1,847	6%	6%	13%	7%
Husky Energy	Canada (C$)	16.3	307	287	312	302	312	338	353	380	400	430	422	2%	6%	6%	5%
Imperial Oil	Canada (C$)	27.9	297	292	300	282	294	310	381	445	453	477	497	1%	5%	20%	10%
Lukoil	Russia ($)	27.4	2,201	2,227	2,117	2,120	2,153	2,291	2,369	2,234	2,417	2,472	2,546	1%	4%	-1%	2%
MOL	Hungary (HUF)	4.8	108	144	147	119	104	98	105	110	115	129	135	-2%	-9%	6%	7%
Novatek	Russia ($)	28.2	642	741	936	1,097	1,194	1,237	1,407	1,543	1,577	1,678	1,757	14%	6%	12%	7%
OMV	Austria (€)	8.1	317	318	288	303	288	309	304	313	345	345	361	0%	1%	1%	3%
Petrobras (PN)	Brazil (BrR)	31.6	2,525	2,583	2,609	2,592	2,521	2,623	2,740	2,791	2,948	3,103	3,292	1%	1%	3%	5%
PetroChina	China (Rmb)	238.2	3,275	3,364	3,522	3,679	3,835	3,942	3,833	3,823	3,876	3,936	4,000	4%	4%	-2%	0%
PTT Public Company	Thailand (Bt)	20.7	219	233	265	264	276	293	319	356	351	338	323	6%	5%	10%	2%
Reliance Industries	India (INR)	36.9	-	66	231	249	363	239	245	224	240	272	317	-	-2%	-3%	6%
Repsol	Spain (€)	18.4	906	884	794	333	347	355	570	752	785	818	832	-17%	3%	46%	19%
Rosneft	Russia ($)	38.9	2,387	2,521	2,586	2,703	4,451	5,075	5,155	5,182	5,337	5,653	5,736	16%	37%	1%	2%
Royal Dutch Shell	UK (p)	156.1	3,152	3,314	3,215	3,262	3,199	3,080	2,963	3,015	3,076	3,115	3,176	0%	-3%	-1%	1%
Sasol	S.Africa (Rd)	18.8	266	267	277	279	281	300	304	310	316	324	334	3%	5%	2%	4%
Sinopec	China (Rmb)	89.5	1,034	1,100	1,117	1,172	1,213	1,315	1,305	1,359	1,439	1,530	1,565	5%	6%	2%	4%
Statoil	Norway (Nkr)	46.3	1,807	1,704	1,651	1,804	1,756	1,729	1,739	1,759	1,806	1,806	1,780	-1%	-2%	1%	1%
Suncor Energy	Canada (C$)	38.2	582	568	619	628	643	618	685	686	723	735	807	1%	-1%	5%	5%
Surgutneftegaz	Russia ($)	22.4	1,424	1,421	1,434	1,429	1,430	1,387	1,383	1,383	1,378	1,368	1,351	-1%	-1%	0%	-1%
TOTAL	France ($)	102.1	2,281	2,391	2,346	2,300	2,299	2,146	2,320	2,434	2,602	2,775	2,889	-1%	-3%	7%	6%
Global			46,749	48,806	48,756	48,295	50,228	50,019	51,395	52,609	54,285	55,709	56,923	1%	2%	3%	3%
Big Five			16,066	16,737	16,193	15,741	15,501	14,918	15,223	15,701	16,217	16,580	16,854	-1%	-3%	3%	2%
US			8,078	8,609	8,653	8,324	8,289	8,090	8,394	8,778	9,157	9,370	9,523	0%	-1%	4%	3%
Europe			14,991	15,049	14,128	13,825	13,496	13,100	13,715	14,245	14,700	15,145	15,451	-3%	-3%	4%	3%
EM			23,680	25,148	25,975	26,145	28,443	28,829	29,286	29,586	30,427	31,194	31,949	4%	5%	1%	2%

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	603	643	679	731	781	842	834	825	861	901	945	7%	7%	-1%	2%
Apache Corp.	US ($)	16.1	583	658	748	778	760	647	563	542	557	579	603	2%	-9%	-8%	-1%
Cabot Oil & Gas	US ($)	9.4	47	60	86	122	189	243	282	308	379	455	545	39%	41%	13%	18%
Canadian Natural	Canada (C$)	22.6	-	-	598	655	671	790	855	857	892	978	1,002	7%	10%	4%	5%
Chesapeake Energy	US ($)	4.8	413	473	545	647	670	706	675	652	650	654	668	11%	4%	-4%	-1%
CNOOC Ltd	China (Rmb)	50.8	619	895	904	950	1,121	1,177	1,330	1,356	1,361	1,351	1,418	14%	11%	7%	4%
Concho	US ($)	12.6	30	42	64	81	92	112	142	154	169	186	205	30%	17%	17%	13%
ConocoPhillips	US ($)	58.2	1,831	1,740	1,619	1,578	1,501	1,540	1,580	1,651	1,709	1,754	1,746	-3%	-1%	4%	3%
Continental	US ($)	11.5	37	43	62	98	136	174	216	228	245	267	295	36%	34%	14%	11%
Crescent Point	Canada (C$)	5.6	-	-	74	99	120	141	164	172	177	182	190	23%	19%	10%	6%
Devon Energy	US ($)	16.5	671	624	658	684	693	673	671	671	693	717	748	0%	-1%	0%	2%
Encana	Canada (US$)	5.6	-	-	579	528	517	478	416	391	412	439	501	-5%	-5%	-10%	1%
EOG Resources	US ($)	42.2	353	386	423	466	510	595	577	598	631	674	727	11%	13%	0%	4%
Hess Corp.	US ($)	16.2	408	418	370	406	337	329	372	372	387	416	427	-4%	-10%	6%	5%
Lundin Petroleum	Sweden ($)	3.9	-	-	-	36	33	25	31	75	77	68	57	-	-16%	73%	18%
Marathon Oil	US ($)	11.1	431	420	406	479	490	434	432	427	435	464	489	0%	-5%	-1%	2%
Murphy Oil	US ($)	4.9	156	189	178	195	207	224	204	191	192	193	194	7%	7%	-8%	-3%
Noble Energy	US ($)	13.2	210	216	222	241	273	298	343	394	427	490	578	7%	11%	15%	14%
Occidental Petroleum	US ($)	53.2	714	744	731	764	762	715	665	706	731	764	801	0%	-3%	-1%	2%
Oil & Natural Gas	India (INR)	28.9	1,135	1,122	1,113	1,135	1,118	1,067	1,079	1,100	1,143	1,159	1,175	-1%	-3%	2%	2%
Pioneer Natural Res.	US ($)	17.7	115	113	124	154	171	186	201	231	266	307	353	10%	10%	12%	14%
PTT E&P (F)	Thailand (Bt)	8.1	233	265	264	276	293	322	331	340	330	321	330	7%	8%	3%	1%
Range Resources	US ($)	6.2	73	83	92	125	157	194	233	276	331	397	477	22%	24%	19%	20%
Southwestern Energy	US ($)	5.9	137	185	228	257	300	351	448	494	552	620	688	21%	17%	19%	14%
Tullow	UK ($)	2.8	58	58	78	79	82	75	74	95	112	121	125	5%	-3%	12%	11%
Woodside Petroleum	Australia (A$)	17.4	209	196	177	233	238	261	243	241	238	243	227	4%	6%	-4%	-3%
US			6813	7729	8487	9089	9336	9672	9874	10138	10696	11436	12455	4%	3%	2%	5%
International			2254	2536	2536	2709	2884	2927	3087	3206	3262	3262	3333	5%	4%	5%	3%
Global			9,068	10,265	11,023	11,798	12,219	12,599	12,961	13,344	13,957	14,699	15,788	4%	3%	3%	5%

Oil and gas production growth

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	4%	0%	-1%	2%	-3%	-4%	15%	16%	10%	4%	5%	**-1%**	**-4%**	**15%**	**10%**
BP	UK ($)	94.0	4%	-4%	-10%	-4%	-3%	-2%	3%	1%	0%	1%	1%	**-5%**	**-3%**	**2%**	**1%**
Cenovus	Canada (C$)	11.3	-	-2%	-3%	9%	1%	6%	-2%	1%	9%	8%	4%	**2%**	**4%**	**0%**	**4%**
Chevron Corp.	US ($)	144.3	7%	2%	-3%	-2%	0%	-1%	1%	9%	6%	3%	1%	**-1%**	**-1%**	**5%**	**4%**
Eni	Italy (€)	58.0	-2%	3%	-13%	8%	-5%	-1%	8%	0%	0%	6%	0%	**-2%**	**-3%**	**4%**	**3%**
ExxonMobil	US ($)	302.1	0%	13%	1%	-6%	-2%	-5%	3%	1%	3%	1%	0%	**0%**	**-3%**	**2%**	**2%**
GALP	Portugal (€)	8.3	-2%	22%	-7%	65%	15%	30%	56%	43%	45%	30%	30%	**23%**	**22%**	**49%**	**40%**
Gazprom	Russia ($)	49.6	-14%	10%	2%	-4%	1%	-7%	-1%	0%	1%	-1%	2%	**0%**	**-3%**	**-1%**	**0%**
Gazprom Neft	Russia ($)	11.0	4%	6%	8%	4%	5%	6%	17%	10%	4%	1%	2%	**6%**	**6%**	**13%**	**7%**
Husky Energy	Canada (C$)	16.3	-14%	-6%	9%	-4%	3%	8%	4%	8%	5%	7%	-2%	**2%**	**6%**	**6%**	**5%**
Imperial Oil	Canada (C$)	27.9	-4%	-2%	3%	-6%	4%	5%	23%	17%	2%	5%	4%	**1%**	**5%**	**20%**	**10%**
Lukoil	Russia ($)	27.4	1%	1%	-5%	0%	2%	6%	3%	-6%	8%	2%	3%	**1%**	**4%**	**-1%**	**2%**
MOL	Hungary (HUF)	4.8	25%	33%	3%	-20%	-13%	-6%	8%	5%	4%	13%	4%	**-2%**	**-9%**	**6%**	**7%**
Novatek	Russia ($)	28.2	8%	15%	26%	17%	9%	4%	14%	10%	2%	6%	5%	**14%**	**6%**	**12%**	**7%**
OMV	Austria (€)	8.1	0%	0%	-9%	5%	-5%	7%	-2%	3%	10%	0%	4%	**0%**	**1%**	**1%**	**3%**
Petrobras (PN)	Brazil (BrR)	31.6	5%	2%	1%	-1%	-3%	4%	4%	2%	6%	5%	6%	**1%**	**1%**	**3%**	**5%**
PetroChina	China (Rmb)	238.2	1%	3%	5%	4%	4%	3%	-3%	0%	1%	2%	2%	**4%**	**4%**	**-2%**	**0%**
PTT Public Company	Thailand (Bt)	20.7	22%	6%	13%	0%	5%	6%	9%	12%	-1%	-4%	-4%	**6%**	**5%**	**10%**	**2%**
Reliance Industries	India (INR)	36.9	-	-	250%	8%	46%	-34%	2%	-9%	7%	13%	16%	**-**	**-2%**	**-3%**	**6%**
Repsol	Spain (€)	18.4	-5%	-2%	-10%	-58%	4%	2%	61%	32%	4%	4%	2%	**-17%**	**3%**	**46%**	**19%**
Rosneft	Russia ($)	38.9	3%	6%	3%	4%	65%	14%	2%	1%	3%	6%	1%	**16%**	**37%**	**1%**	**2%**
Royal Dutch Shell	UK (p)	156.1	-3%	5%	-3%	1%	-2%	-4%	-4%	2%	2%	1%	2%	**0%**	**-3%**	**-1%**	**1%**
Sasol	S.Africa (Rd)	18.8	0%	0%	4%	1%	1%	7%	2%	2%	2%	2%	3%	**3%**	**5%**	**2%**	**4%**
Sinopec	China (Rmb)	89.5	10%	6%	2%	5%	3%	8%	-1%	4%	6%	6%	2%	**5%**	**6%**	**2%**	**4%**
Statoil	Norway (Nkr)	46.3	3%	-6%	-3%	9%	-3%	-2%	1%	1%	3%	0%	-1%	**-1%**	**-2%**	**1%**	**1%**
Suncor Energy	Canada (C$)	38.2	120%	-3%	9%	2%	2%	-4%	11%	0%	5%	2%	10%	**1%**	**-1%**	**5%**	**5%**
Surgutneftegaz	Russia ($)	22.4	-3%	0%	1%	0%	0%	-3%	0%	0%	0%	-1%	-1%	**-1%**	**-1%**	**0%**	**-1%**
TOTAL	France ($)	102.1	-3%	5%	-2%	-2%	0%	-7%	8%	5%	7%	7%	4%	**-1%**	**-3%**	**7%**	**6%**
Global			**3%**	**4%**	**7%**	**0%**	**3%**	**-1%**	**4%**	**3%**	**4%**	**3%**	**2%**	**1%**	**2%**	**3%**	**3%**
Big Five			**1%**	**6%**	**-2%**	**-3%**	**-1%**	**-4%**	**2%**	**3%**	**3%**	**2%**	**1%**	**-1%**	**-3%**	**3%**	**2%**
US			**8%**	**7%**	**1%**	**-4%**	**0%**	**-2%**	**4%**	**4%**	**4%**	**2%**	**1%**	**0%**	**-1%**	**4%**	**3%**
Europe			**0%**	**2%**	**-5%**	**1%**	**-2%**	**-3%**	**6%**	**5%**	**4%**	**3%**	**2%**	**-3%**	**-3%**	**4%**	**3%**
EM			**2%**	**4%**	**20%**	**3%**	**11%**	**2%**	**1%**	**1%**	**3%**	**3%**	**3%**	**4%**	**5%**	**1%**	**2%**

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	7%	7%	6%	8%	7%	8%	-1%	-1%	4%	5%	5%	7%	7%	-1%	2%
Apache Corp.	US ($)	16.1	9%	13%	14%	4%	-2%	-15%	-13%	-4%	3%	4%	4%	2%	-9%	-8%	-1%
Cabot Oil & Gas	US ($)	9.4	9%	27%	44%	42%	55%	29%	16%	9%	23%	20%	20%	39%	41%	13%	18%
Canadian Natural	Canada (C$)	22.6	-	-	-	9%	3%	18%	8%	0%	4%	10%	3%	7%	10%	4%	5%
Chesapeake Energy	US ($)	4.8	8%	14%	15%	19%	3%	5%	-4%	-3%	0%	1%	2%	11%	4%	-4%	-1%
CNOOC Ltd	China (Rmb)	50.8	18%	45%	1%	5%	18%	5%	13%	2%	0%	-1%	5%	14%	11%	7%	4%
Concho	US ($)	12.6	55%	41%	52%	26%	13%	22%	27%	8%	10%	10%	10%	30%	17%	17%	13%
ConocoPhillips	US ($)	58.2	4%	-5%	-7%	-3%	-5%	3%	3%	4%	4%	3%	0%	-3%	-1%	4%	3%
Continental	US ($)	11.5	14%	16%	43%	58%	39%	28%	24%	5%	7%	9%	10%	36%	34%	14%	11%
Crescent Point	Canada (C$)	5.6	-	-	-	34%	22%	17%	16%	5%	3%	3%	4%	23%	19%	10%	6%
Devon Energy	US ($)	16.5	3%	-7%	5%	4%	1%	-3%	0%	0%	3%	3%	4%	0%	-1%	0%	2%
Encana	Canada (US$)	5.6	-	-	-	-9%	-2%	-7%	-13%	-6%	5%	7%	14%	-5%	-5%	-10%	1%
EOG Resources	US ($)	42.2	7%	9%	9%	10%	9%	17%	-3%	4%	6%	7%	8%	11%	13%	0%	4%
Hess Corp.	US ($)	16.2	7%	2%	-11%	10%	-17%	-2%	13%	0%	4%	8%	3%	-4%	-10%	6%	5%
Lundin Petroleum	Sweden ($)	3.9	-	-	-	-	-8%	-24%	26%	138%	4%	-13%	-16%	-	-16%	73%	18%
Marathon Oil	US ($)	11.1	6%	-3%	-3%	18%	2%	-12%	0%	-1%	2%	7%	5%	0%	-5%	-1%	2%
Murphy Oil	US ($)	4.9	17%	21%	-6%	10%	6%	9%	-9%	-6%	1%	1%	1%	7%	7%	-8%	-3%
Noble Energy	US ($)	13.2	-2%	3%	3%	9%	13%	9%	15%	15%	8%	15%	18%	7%	11%	15%	14%
Occidental Petroleum	US ($)	53.2	6%	4%	-2%	4%	0%	-6%	-7%	6%	4%	4%	5%	0%	-3%	-1%	2%
Oil & Natural Gas	India (INR)	28.9	16%	-1%	-1%	2%	-2%	-5%	1%	2%	4%	1%	1%	-1%	-3%	2%	2%
Pioneer Natural Res.	US ($)	17.7	1%	-2%	9%	25%	11%	9%	8%	15%	15%	15%	15%	10%	10%	12%	14%
PTT E&P (F)	Thailand (Bt)	8.1	-37%	13%	0%	5%	6%	10%	3%	3%	-3%	-3%	3%	7%	8%	3%	1%
Range Resources	US ($)	6.2	13%	14%	12%	36%	25%	24%	20%	18%	20%	20%	20%	22%	24%	19%	20%
Southwestern Energy	US ($)	5.9	55%	35%	24%	13%	16%	17%	28%	10%	12%	12%	11%	21%	17%	19%	14%
Tullow	UK ($)	2.8	-10%	-1%	35%	1%	3%	-8%	-2%	28%	18%	8%	3%	5%	-3%	12%	11%
Woodside Petroleum	Australia (A$)	17.4	-6%	-6%	-10%	31%	3%	9%	-7%	-1%	-1%	2%	-6%	4%	6%	-4%	-3%
US			8%	6%	4%	10%	6%	6%	3%	4%	6%	7%	8%	4%	3%	2%	5%
International			6%	18%	2%	8%	8%	2%	5%	7%	1%	0%	1%	5%	4%	5%	3%
Global			7%	10%	3%	9%	6%	5%	4%	5%	5%	5%	6%	4%	3%	3%	5%

Oil production – % of total

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	28.3%	26.9%	25.9%	26.3%	30.2%	36.6%	41.4%	41.7%	45.4%	49.3%	53.0%	29.2%	33.4%	41.5%	46.2%
BP	UK ($)	94.0	63.4%	62.1%	62.5%	61.7%	62.3%	61.2%	61.4%	60.9%	58.6%	55.9%	54.6%	62.0%	61.7%	61.1%	58.3%
Cenovus	Canada (C$)	11.3	45.7%	51.2%	55.1%	62.6%	67.0%	71.5%	74.1%	77.0%	80.7%	83.5%	85.4%	61.5%	69.2%	75.6%	80.1%
Chevron Corp.	US ($)	144.3	69.2%	69.6%	69.2%	67.6%	66.7%	66.5%	66.8%	65.9%	61.9%	60.1%	60.1%	67.9%	66.6%	66.3%	63.0%
Eni	Italy (€)	58.0	56.9%	55.0%	53.4%	51.9%	51.5%	51.8%	51.7%	51.8%	52.3%	53.0%	54.7%	52.7%	51.6%	51.7%	52.7%
ExxonMobil	US ($)	302.1	60.7%	54.5%	51.3%	51.6%	52.8%	53.2%	55.8%	57.0%	57.4%	57.7%	58.2%	52.7%	53.0%	56.4%	57.2%
GALP	Portugal (€)	8.3	100.0%	97.7%	100.0%	91.7%	91.3%	89.4%	88.2%	87.6%	86.9%	86.9%	86.7%	94.0%	90.3%	87.9%	87.3%
Gazprom	Russia ($)	49.6	13.9%	13.5%	13.5%	14.3%	14.6%	15.9%	17.0%	17.6%	18.1%	18.6%	18.7%	14.4%	15.2%	17.3%	18.0%
Gazprom Neft	Russia ($)	11.0	94.9%	94.0%	87.3%	85.0%	81.2%	78.6%	71.4%	71.0%	71.1%	71.3%	70.7%	85.2%	79.9%	71.2%	71.1%
Husky Energy	Canada (C$)	16.3	70.6%	70.6%	67.6%	69.4%	72.6%	69.4%	67.4%	70.7%	71.1%	65.4%	66.3%	69.9%	71.0%	69.1%	68.2%
Imperial Oil	Canada (C$)	27.9	83.7%	84.0%	85.9%	88.6%	88.6%	91.0%	94.0%	95.0%	95.1%	95.3%	95.5%	87.6%	89.8%	94.5%	95.0%
Lukoil	Russia ($)	27.4	89.1%	86.6%	86.2%	84.9%	84.7%	85.9%	85.4%	83.7%	84.9%	84.6%	83.3%	85.7%	85.3%	84.6%	84.4%
MOL	Hungary (HUF)	4.8	44.4%	38.6%	41.9%	43.7%	44.2%	43.7%	44.3%	46.9%	51.2%	58.0%	60.7%	42.4%	43.9%	45.6%	52.2%
Novatek	Russia ($)	28.2	9.7%	10.0%	9.0%	7.8%	7.4%	10.0%	12.9%	16.8%	16.3%	15.1%	14.4%	8.9%	8.7%	14.8%	15.1%
OMV	Austria (€)	8.1	54.1%	54.6%	49.7%	53.4%	52.3%	51.3%	50.9%	52.8%	56.7%	57.0%	53.9%	52.2%	51.8%	51.9%	54.3%
Petrobras (PN)	Brazil (BrR)	31.6	83.6%	83.4%	82.7%	81.8%	80.9%	80.8%	79.9%	80.9%	80.1%	80.2%	79.8%	81.9%	80.8%	80.4%	80.1%
PetroChina	China (Rmb)	238.2	70.6%	69.9%	68.9%	68.2%	66.6%	64.9%	64.6%	63.1%	61.8%	60.5%	59.2%	67.7%	65.8%	63.9%	61.9%
PTT Public Company	Thailand (Bt)	20.7	31.8%	31.5%	28.8%	29.0%	29.0%	34.5%	32.6%	29.4%	29.0%	27.6%	24.5%	30.5%	31.7%	31.0%	28.6%
Reliance Industries	India (INR)	36.9	-	78.9%	22.9%	18.3%	9.0%	11.5%	10.9%	11.3%	10.3%	8.8%	7.2%	28.1%	10.3%	11.1%	9.7%
Repsol	Spain (€)	18.4	48.4%	49.7%	48.4%	43.0%	40.1%	37.9%	26.6%	24.1%	23.8%	24.5%	24.5%	43.8%	39.0%	25.3%	24.7%
Rosneft	Russia ($)	38.9	91.4%	92.1%	92.0%	90.2%	86.0%	82.0%	79.4%	78.3%	77.5%	73.9%	73.3%	88.5%	84.0%	78.8%	76.5%
Royal Dutch Shell	UK (p)	156.1	53.2%	51.6%	51.8%	50.1%	48.2%	48.2%	50.4%	50.3%	50.7%	50.5%	51.4%	50.0%	48.2%	50.4%	50.7%
Sasol	S.Africa (Rd)	18.8	83.7%	83.8%	81.4%	79.1%	76.4%	75.7%	76.8%	76.9%	75.0%	72.5%	67.2%	79.3%	76.1%	76.9%	73.7%
Sinopec	China (Rmb)	89.5	78.4%	81.6%	80.4%	75.1%	74.1%	75.1%	72.2%	69.5%	65.7%	61.8%	60.6%	77.3%	74.6%	70.9%	66.0%
Statoil	Norway (Nkr)	46.3	59.0%	56.7%	57.2%	53.5%	54.9%	56.2%	58.3%	53.8%	52.2%	50.8%	49.5%	55.7%	55.5%	56.1%	52.9%
Suncor Energy	Canada (C$)	38.2	87.2%	86.2%	87.5%	92.3%	95.0%	99.5%	99.6%	99.7%	99.8%	99.8%	99.8%	92.1%	97.3%	99.7%	99.7%
Surgutneftegaz	Russia ($)	22.4	84.1%	84.1%	85.1%	86.0%	86.3%	88.9%	89.1%	89.2%	89.1%	89.0%	88.9%	86.1%	87.6%	89.2%	89.1%
TOTAL	France ($)	102.1	60.5%	56.1%	52.2%	53.0%	50.8%	48.2%	52.7%	51.3%	51.9%	50.9%	48.8%	52.1%	49.5%	52.0%	51.1%
Global			63.5%	62.3%	58.8%	58.1%	58.0%	58.1%	58.6%	58.4%	57.7%	57.0%	56.6%	59.1%	58.0%	58.5%	57.6%
Big Five			61.1%	57.9%	56.3%	55.8%	55.7%	55.1%	57.0%	57.0%	56.3%	55.7%	55.6%	56.2%	55.4%	57.0%	56.3%
US			65.4%	63.2%	61.5%	61.6%	62.5%	63.2%	64.6%	65.2%	64.4%	64.0%	64.4%	62.4%	62.8%	64.9%	64.5%
Europe			56.2%	53.9%	52.7%	51.4%	51.1%	51.0%	52.4%	51.7%	51.8%	51.6%	51.5%	52.0%	51.1%	52.1%	51.8%
EM			68.1%	67.7%	61.4%	60.8%	60.1%	60.4%	58.7%	58.3%	57.1%	55.6%	54.3%	62.1%	60.2%	58.5%	56.8%

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	38.8%	41.1%	42.7%	43.1%	43.4%	48.8%	53.0%	54.8%	56.5%	57.0%	57.6%	**43.8%**	**46.1%**	**53.9%**	**55.8%**
Apache Corp.	US ($)	16.1	49.7%	52.1%	49.6%	50.8%	54.0%	59.9%	64.2%	65.3%	66.0%	66.9%	67.9%	**53.3%**	**57.0%**	**64.7%**	**66.1%**
Cabot Oil & Gas	US ($)	9.4	4.9%	3.8%	4.6%	5.4%	4.7%	4.5%	6.0%	6.1%	5.9%	5.9%	5.9%	**4.6%**	**4.6%**	**6.1%**	**6.0%**
Canadian Natural	Canada (C$)	22.6	-	-	65.0%	68.9%	71.3%	67.2%	66.1%	67.7%	69.0%	71.8%	72.6%	**67.9%**	**69.2%**	**66.9%**	**69.5%**
Chesapeake Energy	US ($)	4.8	7.8%	10.7%	15.9%	20.6%	25.3%	29.2%	27.8%	25.4%	25.1%	25.4%	25.9%	**20.4%**	**27.3%**	**26.6%**	**25.9%**
CNOOC Ltd	China (Rmb)	50.8	82.4%	80.6%	78.4%	80.7%	81.4%	81.2%	81.8%	80.3%	79.2%	78.9%	79.2%	**80.5%**	**81.3%**	**81.1%**	**79.9%**
Concho	US ($)	12.6	67.1%	66.5%	62.0%	60.5%	62.8%	64.4%	67.2%	67.2%	67.2%	67.2%	67.2%	**63.2%**	**63.6%**	**67.2%**	**67.2%**
ConocoPhillips	US ($)	58.2	55.6%	55.9%	53.5%	55.1%	56.3%	57.3%	58.3%	59.2%	60.8%	63.3%	64.6%	**55.6%**	**56.8%**	**58.8%**	**61.2%**
Continental	US ($)	11.5	73.6%	74.8%	72.9%	70.2%	70.5%	70.0%	66.9%	66.5%	65.2%	64.1%	63.1%	**71.7%**	**70.3%**	**66.7%**	**65.2%**
Crescent Point	Canada (C$)	5.6	-	-	90.2%	90.8%	90.7%	91.2%	91.0%	91.0%	91.0%	91.0%	91.0%	**90.7%**	**91.0%**	**91.0%**	**91.0%**
Devon Energy	US ($)	16.5	34.2%	31.9%	33.9%	37.4%	42.4%	52.5%	60.4%	61.7%	62.9%	64.2%	65.6%	**39.6%**	**47.4%**	**61.0%**	**63.0%**
Encana	Canada (US$)	5.6	-	-	4.1%	5.9%	10.4%	18.1%	32.5%	39.9%	44.8%	50.1%	53.6%	**9.6%**	**14.3%**	**36.2%**	**44.2%**
EOG Resources	US ($)	42.2	22.3%	27.2%	36.8%	45.8%	56.0%	62.1%	63.6%	66.3%	68.1%	70.2%	72.3%	**45.6%**	**59.0%**	**65.0%**	**68.1%**
Hess Corp.	US ($)	16.2	71.8%	73.3%	72.0%	74.7%	72.0%	74.0%	73.2%	72.7%	70.4%	69.3%	69.4%	**73.2%**	**73.0%**	**73.0%**	**71.0%**
Lundin Petroleum	Sweden ($)	3.9	-	-	-	81.0%	78.9%	76.5%	82.5%	90.6%	92.3%	95.1%	95.5%	**78.8%**	**77.7%**	**86.6%**	**91.2%**
Marathon Oil	US ($)	11.1	63.0%	65.2%	64.4%	68.6%	70.8%	69.4%	69.8%	69.7%	71.7%	73.7%	75.2%	**67.7%**	**70.1%**	**69.8%**	**72.0%**
Murphy Oil	US ($)	4.9	80.0%	68.5%	57.1%	58.2%	65.8%	66.9%	66.1%	65.2%	65.4%	65.5%	65.7%	**63.3%**	**66.4%**	**65.7%**	**65.6%**
Noble Energy	US ($)	13.2	38.0%	39.4%	39.1%	46.4%	45.0%	44.5%	44.2%	45.4%	46.9%	49.3%	50.3%	**42.9%**	**44.7%**	**44.8%**	**47.2%**
Occidental Petroleum	US ($)	53.2	76.7%	73.5%	72.1%	71.9%	73.0%	74.5%	75.0%	74.1%	74.7%	75.6%	76.5%	**73.0%**	**73.7%**	**74.6%**	**75.2%**
Oil & Natural Gas	India (INR)	28.9	61.5%	60.3%	59.5%	60.2%	54.7%	59.2%	58.6%	57.7%	55.7%	54.8%	53.7%	**58.8%**	**57.0%**	**58.2%**	**56.1%**
Pioneer Natural Res.	US ($)	17.7	45.0%	46.0%	51.4%	59.5%	63.5%	68.4%	70.2%	75.1%	77.3%	78.9%	80.8%	**57.8%**	**66.0%**	**72.6%**	**76.4%**
PTT E&P (F)	Thailand (Bt)	8.1	31.5%	28.9%	29.1%	29.1%	34.6%	40.5%	29.9%	30.8%	30.1%	25.8%	24.6%	**32.5%**	**37.5%**	**30.3%**	**28.2%**
Range Resources	US ($)	6.2	17.9%	21.4%	22.4%	21.4%	22.9%	32.4%	29.7%	28.1%	28.1%	28.1%	28.1%	**24.1%**	**27.6%**	**28.9%**	**28.5%**
Southwestern Energy	US ($)	5.9	0.2%	0.3%	0.1%	0.1%	0.1%	0.4%	7.4%	8.4%	9.3%	10.3%	11.8%	**0.2%**	**0.2%**	**7.9%**	**9.4%**
Tullow	UK ($)	2.8	66.3%	68.2%	74.3%	62.9%	70.4%	75.4%	80.4%	84.8%	85.7%	87.4%	88.4%	**70.2%**	**72.9%**	**82.6%**	**85.3%**
Woodside Petroleum	Australia (A$)	17.4	49.1%	44.2%	40.6%	31.2%	21.4%	22.0%	23.2%	21.5%	18.9%	16.4%	12.1%	**31.9%**	**21.7%**	**22.3%**	**18.4%**
US			**46.8%**	**52.9%**	**50.8%**	**53.3%**	**55.0%**	**57.8%**	**60.5%**	**61.5%**	**62.5%**	**63.8%**	**65.2%**	**54.0%**	**56.4%**	**61.0%**	**62.7%**
International			**65.3%**	**64.1%**	**63.6%**	**63.4%**	**61.2%**	**61.7%**	**62.2%**	**62.2%**	**60.9%**	**59.9%**	**59.0%**	**62.8%**	**61.4%**	**62.2%**	**60.8%**
Global			**51.7%**	**56.3%**	**54.5%**	**56.4%**	**56.7%**	**58.7%**	**60.9%**	**61.6%**	**62.1%**	**62.9%**	**63.8%**	**56.5%**	**57.7%**	**61.3%**	**62.3%**

Gas production – % of total

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	71.7%	73.1%	74.1%	73.7%	69.8%	63.4%	58.6%	58.3%	54.6%	50.7%	47.0%	**70.8%**	**66.6%**	**58.5%**	**53.8%**
BP	UK ($)	94.0	36.6%	37.9%	37.5%	38.3%	37.7%	38.8%	38.6%	39.1%	41.4%	44.1%	45.4%	**38.0%**	**38.3%**	**38.9%**	**41.7%**
Cenovus	Canada (C$)	11.3	54.3%	48.8%	44.9%	37.4%	33.0%	28.5%	25.9%	23.0%	19.3%	16.5%	14.6%	**38.5%**	**30.8%**	**24.4%**	**19.9%**
Chevron Corp.	US ($)	144.3	30.8%	30.4%	30.8%	32.4%	33.3%	33.5%	33.2%	34.1%	38.1%	39.9%	39.9%	**32.1%**	**33.4%**	**33.7%**	**37.0%**
Eni	Italy (€)	58.0	43.1%	45.0%	46.6%	48.1%	48.5%	48.2%	48.3%	48.2%	47.7%	47.0%	45.3%	**47.3%**	**48.4%**	**48.3%**	**47.3%**
ExxonMobil	US ($)	302.1	39.3%	45.5%	48.7%	48.4%	47.2%	46.8%	44.2%	43.0%	42.6%	42.3%	41.8%	**47.3%**	**47.0%**	**43.6%**	**42.8%**
GALP	Portugal (€)	8.3	0.0%	2.3%	0.0%	8.3%	8.7%	10.6%	11.8%	12.4%	13.1%	13.1%	13.3%	**6.0%**	**9.7%**	**12.1%**	**12.7%**
Gazprom	Russia ($)	49.6	86.1%	86.5%	86.5%	85.7%	85.4%	84.1%	83.0%	82.4%	81.9%	81.4%	81.3%	**85.6%**	**84.8%**	**82.7%**	**82.0%**
Gazprom Neft	Russia ($)	11.0	5.1%	6.0%	12.7%	15.0%	18.8%	21.4%	28.6%	29.0%	28.9%	28.7%	29.3%	**14.8%**	**20.1%**	**28.8%**	**28.9%**
Husky Energy	Canada (C$)	16.3	29.4%	29.4%	32.4%	30.6%	27.4%	30.6%	32.6%	29.3%	28.9%	34.6%	33.7%	**30.1%**	**29.0%**	**30.9%**	**31.8%**
Imperial Oil	Canada (C$)	27.9	16.3%	16.0%	14.1%	11.4%	11.4%	9.0%	6.0%	5.0%	4.9%	4.7%	4.5%	**12.4%**	**10.2%**	**5.5%**	**5.0%**
Lukoil	Russia ($)	27.4	10.9%	13.4%	13.8%	15.1%	15.3%	14.1%	14.6%	16.3%	15.1%	15.4%	16.7%	**14.3%**	**14.7%**	**15.4%**	**15.6%**
MOL	Hungary (HUF)	4.8	55.6%	61.4%	58.1%	56.3%	55.8%	56.3%	55.7%	53.1%	48.8%	42.0%	39.3%	**57.6%**	**56.1%**	**54.4%**	**47.8%**
Novatek	Russia ($)	28.2	90.3%	90.0%	91.0%	92.2%	92.6%	90.0%	87.1%	83.2%	83.7%	84.9%	85.6%	**91.1%**	**91.3%**	**85.2%**	**84.9%**
OMV	Austria (€)	8.1	45.9%	45.4%	50.3%	46.6%	47.7%	48.7%	49.1%	47.2%	43.3%	43.0%	46.1%	**47.8%**	**48.2%**	**48.1%**	**45.7%**
Petrobras (PN)	Brazil (BrR)	31.6	16.4%	16.6%	17.3%	18.2%	19.1%	19.2%	20.1%	19.1%	19.9%	19.8%	20.2%	**18.1%**	**19.2%**	**19.6%**	**19.9%**
PetroChina	China (Rmb)	238.2	29.4%	30.1%	31.1%	31.8%	33.4%	35.1%	35.4%	36.9%	38.2%	39.5%	40.8%	**32.3%**	**34.2%**	**36.1%**	**38.1%**
PTT Public Company	Thailand (Bt)	20.7	68.2%	68.5%	71.2%	71.0%	71.0%	65.5%	67.4%	70.6%	71.0%	72.4%	75.5%	**69.5%**	**68.3%**	**69.0%**	**71.4%**
Reliance Industries	India (INR)	36.9	-	21.1%	77.1%	81.7%	91.0%	88.5%	89.1%	88.7%	89.7%	91.2%	92.8%	**71.9%**	**89.7%**	**88.9%**	**90.3%**
Repsol	Spain (€)	18.4	51.6%	50.3%	51.6%	57.0%	59.9%	62.1%	73.4%	75.9%	76.2%	75.5%	75.5%	**56.2%**	**61.0%**	**74.7%**	**75.3%**
Rosneft	Russia ($)	38.9	8.6%	7.9%	8.0%	9.8%	14.0%	18.0%	20.6%	21.7%	22.5%	26.1%	26.7%	**11.5%**	**16.0%**	**21.2%**	**23.5%**
Royal Dutch Shell	UK (p)	156.1	46.8%	48.4%	48.2%	49.9%	51.8%	51.8%	49.6%	49.7%	49.3%	49.5%	48.6%	**50.0%**	**51.8%**	**49.6%**	**49.3%**
Sasol	S.Africa (Rd)	18.8	16.3%	16.2%	18.6%	20.9%	23.6%	24.3%	23.2%	23.1%	25.0%	27.5%	32.8%	**20.7%**	**23.9%**	**23.1%**	**26.3%**
Sinopec	China (Rmb)	89.5	21.6%	18.4%	19.6%	24.9%	25.9%	24.9%	27.8%	30.5%	34.3%	38.2%	39.4%	**22.7%**	**25.4%**	**29.1%**	**34.0%**
Statoil	Norway (Nkr)	46.3	41.0%	43.3%	42.8%	46.5%	45.1%	43.8%	41.7%	46.2%	47.8%	49.2%	50.5%	**44.3%**	**44.5%**	**43.9%**	**47.1%**
Suncor Energy	Canada (C$)	38.2	12.8%	13.8%	12.5%	7.7%	5.0%	0.5%	0.4%	0.3%	0.2%	0.2%	0.2%	**7.9%**	**2.7%**	**0.3%**	**0.3%**
Surgutneftegaz	Russia ($)	22.4	15.9%	15.9%	14.9%	14.0%	13.7%	11.1%	10.9%	10.8%	10.9%	11.0%	11.1%	**13.9%**	**12.4%**	**10.8%**	**10.9%**
TOTAL	France ($)	102.1	39.5%	43.9%	47.8%	47.0%	49.2%	51.8%	47.3%	48.7%	48.1%	49.1%	51.2%	**47.9%**	**50.5%**	**48.0%**	**48.9%**
Global			**36.5%**	**37.7%**	**41.2%**	**41.9%**	**42.0%**	**41.9%**	**41.4%**	**41.6%**	**42.3%**	**43.0%**	**43.4%**	**40.9%**	**42.0%**	**41.5%**	**42.4%**
Big Five			**38.9%**	**42.1%**	**43.7%**	**44.2%**	**44.3%**	**44.9%**	**43.0%**	**43.0%**	**43.7%**	**44.3%**	**44.4%**	**43.8%**	**44.6%**	**43.0%**	**43.7%**
US			**34.6%**	**36.8%**	**38.5%**	**38.4%**	**37.5%**	**36.8%**	**35.4%**	**34.8%**	**35.6%**	**36.0%**	**35.6%**	**37.6%**	**37.2%**	**35.1%**	**35.5%**
Europe			**43.8%**	**46.1%**	**47.3%**	**48.6%**	**48.9%**	**49.0%**	**47.6%**	**48.3%**	**48.2%**	**48.4%**	**48.5%**	**48.0%**	**48.9%**	**47.9%**	**48.2%**
EM			**31.9%**	**32.3%**	**38.6%**	**39.2%**	**39.9%**	**39.6%**	**41.3%**	**41.7%**	**42.9%**	**44.4%**	**45.7%**	**37.9%**	**39.8%**	**41.5%**	**43.2%**

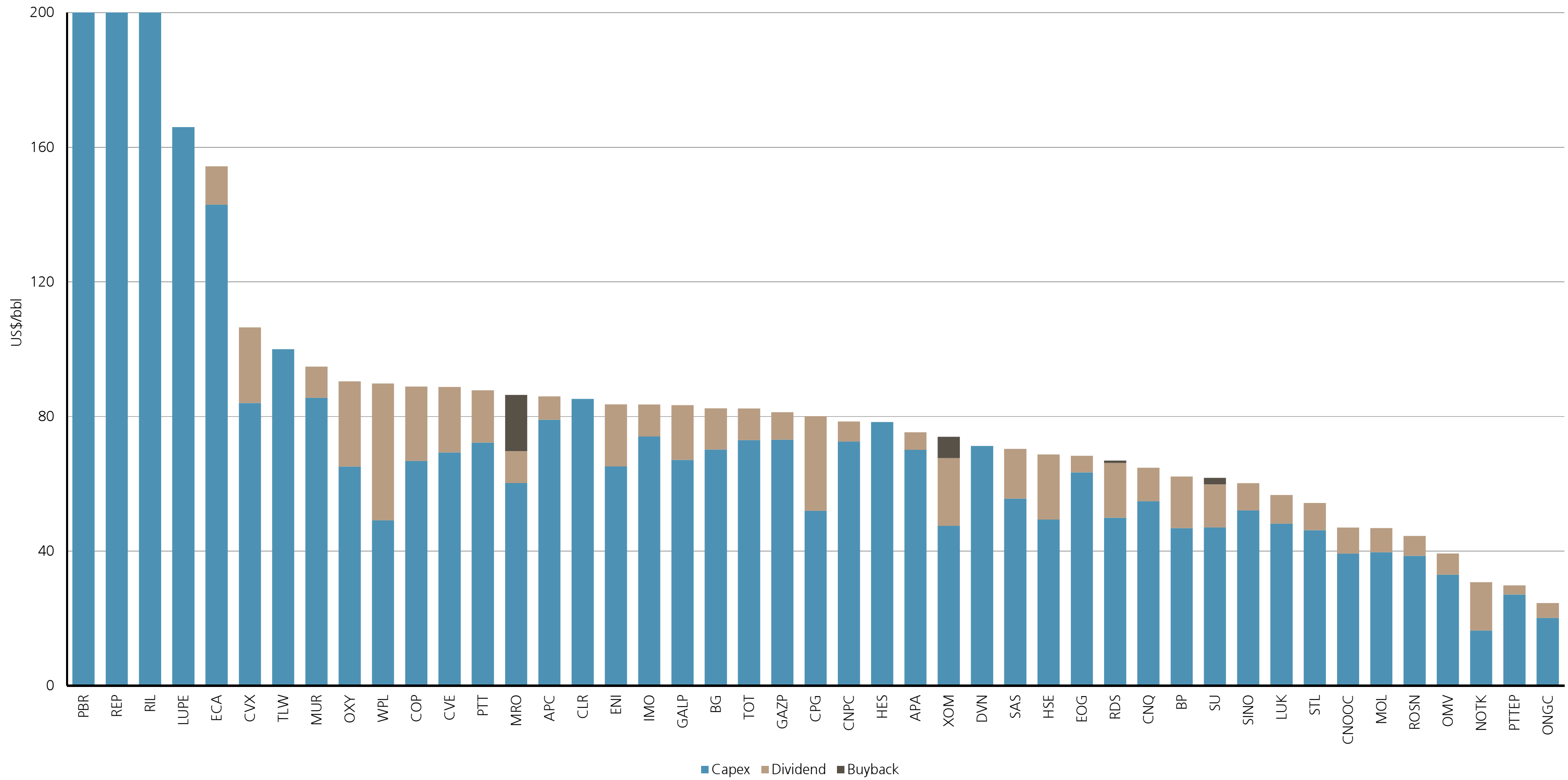
Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
Anadarko Petroleum	US ($)	34.7	61.2%	58.9%	57.3%	56.9%	56.6%	51.2%	47.0%	45.2%	43.5%	43.0%	42.4%	**56.2%**	**53.9%**	**46.1%**	**44.2%**
Apache Corp.	US ($)	16.1	50.3%	47.9%	50.4%	49.2%	46.0%	40.1%	35.8%	34.7%	34.0%	33.1%	32.1%	**46.7%**	**43.0%**	**35.3%**	**33.9%**
Cabot Oil & Gas	US ($)	9.4	95.1%	96.2%	95.4%	94.6%	95.3%	95.5%	94.0%	93.9%	94.1%	94.1%	94.1%	**95.4%**	**95.4%**	**93.9%**	**94.0%**
Canadian Natural	Canada (C$)	22.6	-	-	35.0%	31.1%	28.7%	32.8%	33.9%	32.3%	31.0%	28.2%	27.4%	**32.1%**	**30.8%**	**33.1%**	**30.5%**
Chesapeake Energy	US ($)	4.8	92.2%	89.3%	84.1%	79.4%	74.7%	70.8%	72.2%	74.6%	74.9%	74.6%	74.1%	**79.6%**	**72.7%**	**73.4%**	**74.1%**
CNOOC Ltd	China (Rmb)	50.8	17.6%	19.4%	21.6%	19.3%	18.6%	18.8%	18.2%	19.7%	20.8%	21.1%	20.8%	**19.5%**	**18.7%**	**18.9%**	**20.1%**
Concho	US ($)	12.6	32.9%	33.5%	38.0%	39.5%	37.2%	35.6%	32.8%	32.8%	32.8%	32.8%	32.8%	**36.8%**	**36.4%**	**32.8%**	**32.8%**
ConocoPhillips	US ($)	58.2	44.4%	44.1%	46.5%	44.9%	43.7%	42.7%	41.7%	40.8%	39.2%	36.7%	35.4%	**44.4%**	**43.2%**	**41.2%**	**38.8%**
Continental	US ($)	11.5	26.4%	25.2%	27.1%	29.8%	29.5%	30.0%	33.1%	33.5%	34.8%	35.9%	36.9%	**28.3%**	**29.7%**	**33.3%**	**34.8%**
Crescent Point	Canada (C$)	5.6	-	-	9.8%	9.2%	9.3%	8.8%	9.0%	9.0%	9.0%	9.0%	9.0%	**9.3%**	**9.0%**	**9.0%**	**9.0%**
Devon Energy	US ($)	16.5	65.8%	68.1%	66.1%	62.6%	57.6%	47.5%	39.6%	38.3%	37.1%	35.8%	34.4%	**60.4%**	**52.6%**	**39.0%**	**37.0%**
Encana	Canada (US$)	5.6	-	-	95.9%	94.1%	89.6%	81.9%	67.5%	60.1%	55.2%	49.9%	46.4%	**90.4%**	**85.7%**	**63.8%**	**55.8%**
EOG Resources	US ($)	42.2	77.7%	72.8%	63.2%	54.2%	44.0%	37.9%	36.4%	33.7%	31.9%	29.8%	27.7%	**54.4%**	**41.0%**	**35.0%**	**31.9%**
Hess Corp.	US ($)	16.2	28.2%	26.7%	28.0%	25.3%	28.0%	26.0%	26.8%	27.3%	29.6%	30.7%	30.6%	**26.8%**	**27.0%**	**27.0%**	**29.0%**
Lundin Petroleum	Sweden ($)	3.9	-	-	-	19.0%	21.1%	23.5%	17.5%	9.4%	7.7%	4.9%	4.5%	**21.2%**	**22.3%**	**13.4%**	**8.8%**
Marathon Oil	US ($)	11.1	37.0%	34.8%	35.6%	31.4%	29.2%	30.6%	30.2%	30.3%	28.3%	26.3%	24.8%	**32.3%**	**29.9%**	**30.2%**	**28.0%**
Murphy Oil	US ($)	4.9	20.0%	31.5%	42.9%	41.8%	34.2%	33.1%	33.9%	34.8%	34.6%	34.5%	34.3%	**36.7%**	**33.6%**	**34.3%**	**34.4%**
Noble Energy	US ($)	13.2	62.0%	60.6%	60.9%	53.6%	55.0%	55.5%	55.8%	54.6%	53.1%	50.7%	49.7%	**57.1%**	**55.3%**	**55.2%**	**52.8%**
Occidental Petroleum	US ($)	53.2	23.3%	26.5%	27.9%	28.1%	27.0%	25.5%	25.0%	25.9%	25.3%	24.4%	23.5%	**27.0%**	**26.3%**	**25.4%**	**24.8%**
Oil & Natural Gas	India (INR)	28.9	38.5%	39.7%	40.5%	39.8%	45.3%	40.8%	41.4%	42.3%	44.3%	45.2%	46.3%	**41.2%**	**43.0%**	**41.8%**	**43.9%**
Pioneer Natural Res.	US ($)	17.7	55.0%	54.0%	48.6%	40.5%	36.5%	31.6%	29.8%	24.9%	22.7%	21.1%	19.2%	**42.2%**	**34.0%**	**27.4%**	**23.6%**
PTT E&P (F)	Thailand (Bt)	8.1	68.5%	71.1%	70.9%	70.9%	65.4%	59.5%	70.1%	69.2%	69.9%	74.2%	75.4%	**67.5%**	**62.5%**	**69.7%**	**71.8%**
Range Resources	US ($)	6.2	82.1%	78.6%	77.6%	78.6%	77.1%	67.6%	70.3%	71.9%	71.9%	71.9%	71.9%	**75.9%**	**72.4%**	**71.1%**	**71.5%**
Southwestern Energy	US ($)	5.9	99.8%	99.7%	99.9%	99.9%	99.9%	99.6%	92.6%	91.6%	90.7%	89.7%	88.2%	**99.8%**	**99.8%**	**92.1%**	**90.6%**
Tullow	UK ($)	2.8	33.7%	31.8%	25.7%	37.1%	29.6%	24.6%	19.6%	15.2%	14.3%	12.6%	11.6%	**29.8%**	**27.1%**	**17.4%**	**14.7%**
Woodside Petroleum	Australia (A$)	17.4	50.9%	55.8%	59.4%	68.8%	78.6%	78.0%	76.8%	78.5%	81.1%	83.6%	87.9%	**68.1%**	**78.3%**	**77.7%**	**81.6%**
US			**53.2%**	**47.1%**	**49.2%**	**46.7%**	**45.0%**	**42.2%**	**39.5%**	**38.5%**	**37.5%**	**36.2%**	**34.8%**	**46.0%**	**43.6%**	**39.0%**	**37.3%**
International			**34.7%**	**35.9%**	**36.4%**	**36.6%**	**38.8%**	**38.3%**	**37.8%**	**37.8%**	**39.1%**	**40.1%**	**41.0%**	**37.2%**	**38.6%**	**37.8%**	**39.2%**
Global			**48.3%**	**43.7%**	**45.5%**	**43.6%**	**43.3%**	**41.3%**	**39.1%**	**38.4%**	**37.9%**	**37.1%**	**36.2%**	**43.5%**	**42.3%**	**38.7%**	**37.7%**

Sensitivities

			Oil Price (+/- $1/bbl)				US Gas Price (+/- 50c/mcf)				Refining Margin (+/- 25c/bbl)			
		M.Cap	% Impact on Net Income		% Impact on DACF		% Impact on Net Income		% Impact on DACF		% Impact on Net Income		% Impact on DACF	
Company	Country	$ bn	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E
BG Group	UK ($)	49.9	5.0%	3.9%	1.3%	1.2%	1.2%	0.6%	0.3%	0.2%	-	-	-	-
BP	UK ($)	94.0	3.9%	3.3%	0.9%	0.8%	5.3%	4.5%	1.3%	1.1%	1.5%	1.2%	0.3%	0.3%
Cenovus	Canada (C$)	11.3	1.1%	32.1%	1.3%	4.3%	1.6%	25.1%	1.9%	3.4%	0.4%	8.2%	0.5%	1.1%
Chevron Corp.	US ($)	144.3	7.3%	7.0%	1.8%	1.3%	3.0%	2.9%	0.7%	0.6%	2.2%	2.2%	0.6%	0.4%
Eni	Italy (€)	58.0	13.0%	5.8%	1.2%	0.9%	2.8%	1.5%	0.3%	0.2%	2.7%	1.0%	0.2%	0.2%
ExxonMobil	US ($)	302.1	3.9%	4.3%	1.8%	1.9%	3.7%	3.6%	1.7%	1.6%	1.7%	1.8%	0.8%	0.8%
GALP	Portugal (€)	8.3	1.7%	2.9%	0.8%	1.0%	-	-	-	-	2.8%	3.3%	1.3%	1.2%
Gazprom	Russia ($)	49.6	-	1.0%	0.6%	1.1%	-	-	-	-	-	-	-	-
Gazprom Neft	Russia ($)	11.0	-	2.9%	2.4%	2.8%	-	-	-	-	-	-	-	-
Husky Energy	Canada (C$)	16.3	17.6%	20.9%	1.3%	2.0%	23.1%	25.0%	1.7%	2.3%	1.2%	5.2%	0.7%	1.2%
Imperial Oil	Canada (C$)	27.9	2.3%	3.2%	1.0%	1.8%	0.2%	0.3%	0.1%	0.2%	1.9%	2.2%	0.9%	1.3%
Lukoil	Russia ($)	27.4	-	3.9%	1.4%	1.4%	-	-	-	-	-	-	-	-
MOL	Hungary (HUF)	4.8	1.5%	2.1%	0.6%	0.7%	-	-	-	-	1.1%	1.3%	1.6%	1.7%
Novatek	Russia ($)	28.2	-	1.3%	0.4%	0.4%	-	-	-	-	-	-	-	-
OMV	Austria (€)	8.1	2.9%	3.3%	1.0%	0.9%	-	-	-	-	1.7%	2.4%	0.6%	0.6%
Petrobras (PN)	Brazil (BrR)	31.6	6.3%	2.8%	0.6%	0.5%	-	-	-	-	13.4%	6.6%	1.3%	1.1%
PetroChina	China (Rmb)	238.2	2.6%	1.8%	0.3%	0.3%	-	-	-	-	0.8%	0.7%	-	-
PTT Public Company	Thailand (Bt)	20.7	1.1%	2.3%	0.7%	1.4%	-	-	-	-	0.6%	0.4%	-	-
Reliance Industries	India (INR)	36.9	1.0%	1.0%	0.8%	0.8%	0.9%	1.0%	0.5%	0.8%	2.0%	2.0%	1.0%	1.8%
Repsol	Spain (€)	18.4	1.4%	3.0%	0.7%	0.9%	-	-	-	-	2.4%	2.6%	1.2%	0.8%
Rosneft	Russia ($)	38.9	-	5.1%	1.3%	1.4%	-	-	-	-	-	-	-	-
Royal Dutch Shell	UK (p)	156.1	2.4%	2.4%	0.8%	0.9%	1.1%	1.1%	0.4%	0.4%	1.3%	1.2%	0.5%	0.5%
Sasol	S.Africa (Rd)	18.8	3.4%	3.1%	1.2%	0.4%	0.9%	0.9%	0.4%	0.2%	0.3%	0.3%	0.1%	0.2%
Sinopec	China (Rmb)	89.5	0.8%	0.8%	0.4%	0.4%	-	-	-	-	2.5%	2.5%	1.2%	1.2%
Statoil	Norway (Nkr)	46.3	32.9%	27.4%	6.0%	5.4%	3.1%	3.0%	0.6%	0.6%	0.7%	0.6%	0.1%	0.1%
Suncor Energy	Canada (C$)	38.2	20.2%	13.7%	2.0%	13.7%	6.5%	4.5%	0.6%	1.1%	1.1%	0.7%	0.1%	0.2%
Surgutneftegaz	Russia ($)	22.4	-	8.5%	1.2%	1.2%	-	-	-	-	-	-	-	-
TOTAL	France ($)	102.1	1.9%	2.4%	0.6%	0.7%	0.4%	0.5%	0.1%	0.1%	1.3%	1.5%	0.5%	0.4%
Global			**4.6%**	**3.9%**	**1.2%**	**1.5%**	**1.6%**	**1.5%**	**0.5%**	**0.4%**	**1.1%**	**1.1%**	**0.4%**	**0.4%**
Big Five			**3.5%**	**3.6%**	**1.2%**	**1.2%**	**2.5%**	**2.4%**	**0.9%**	**0.8%**	**1.5%**	**1.6%**	**0.6%**	**0.6%**
US			**5.4%**	**5.6%**	**1.8%**	**2.7%**	**3.5%**	**3.4%**	**1.3%**	**1.0%**	**1.8%**	**1.8%**	**0.7%**	**0.7%**
Europe			**4.8%**	**4.7%**	**1.2%**	**1.2%**	**1.7%**	**1.6%**	**0.4%**	**0.4%**	**1.4%**	**1.3%**	**0.5%**	**0.4%**
EM			**1.8%**	**2.7%**	**1.0%**	**1.2%**	**0.1%**	**0.1%**	**0.1%**	**0.1%**	**0.3%**	**0.4%**	**0.5%**	**0.8%**

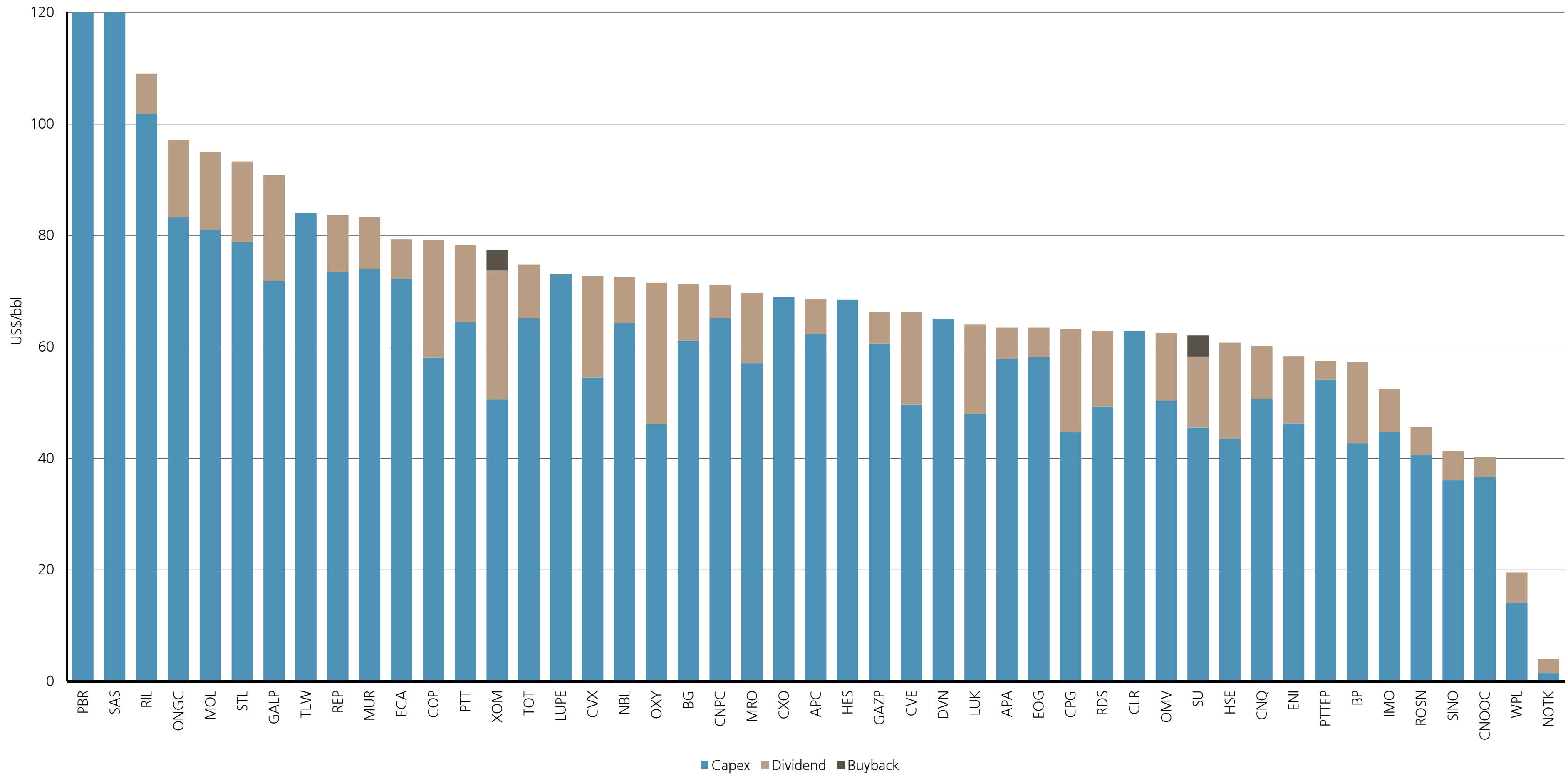
			Oil Price (+/- $1/bbl)				US Gas Price (+/- 50c/mcf)				Refining Margin (+/- 25c/bbl)			
		M.Cap	% Impact on Net Income		% Impact on DACF		% Impact on Net Income		% Impact on DACF		% Impact on Net Income		% Impact on DACF	
Company	Country	$ bn	2015E	2016E	2015E	2016E	2015E	2016E	2015E	2016E	2015E	2016E	2015E	2016E
Anadarko Petroleum	US ($)	34.7	8.3%	9.7%	2.2%	1.9%	17.3%	24.1%	5.9%	6.7%	-	-	-	-
Apache Corp.	US ($)	16.1	8.6%	25.4%	2.0%	2.8%	9.2%	22.7%	2.4%	3.4%	-	-	-	-
Cabot Oil & Gas	US ($)	9.4	4.2%	2.5%	0.6%	0.6%	299.8%	717.6%	16.2%	35.1%	-	-	-	-
Canadian Natural	Canada (C$)	22.6	8.1%	64.3%	1.9%	3.1%	14.3%	108.5%	3.3%	5.2%	-	-	-	-
Chesapeake Energy	US ($)	4.8	7.1%	5.0%	0.4%	3.2%	45.5%	37.1%	9.9%	60.3%	-	-	-	-
CNOOC Ltd	China (Rmb)	50.8	10.6%	8.1%	2.0%	1.5%	1.3%	1.5%	0.8%	1.0%	-	-	-	-
Concho	US ($)	12.6	1.7%	16.2%	0.2%	0.8%	10.8%	39.2%	1.2%	1.3%	-	-	-	-
ConocoPhillips	US ($)	58.2	1.5%	14.7%	0.3%	2.2%	0.7%	24.3%	0.1%	5.9%	-	-	-	-
Continental	US ($)	11.5	9.9%	98.1%	1.3%	2.3%	9.6%	303.2%	1.4%	1.8%	-	-	-	-
Crescent Point	Canada (C$)	5.6	3.4%	54.0%	0.8%	2.1%	1.2%	15.5%	0.3%	0.6%	-	-	-	-
Devon Energy	US ($)	16.5	8.1%	19.3%	1.7%	3.3%	31.5%	33.5%	5.2%	9.4%	-	-	-	-
Encana	Canada (US$)	5.6	0.2%	43.8%	0.4%	1.6%	1.5%	482.7%	4.0%	17.7%	-	-	-	-
EOG Resources	US ($)	42.2	14.5%	38.6%	1.2%	2.4%	14.0%	33.0%	1.4%	3.1%	-	-	-	-
Hess Corp.	US ($)	16.2	2.8%	5.5%	1.6%	2.6%	1.7%	3.1%	1.1%	1.7%	-	-	-	-
Lundin Petroleum	Sweden ($)	3.9	1.3%	7.7%	1.6%	2.1%	-	-	-	-	-	-	-	-
Marathon Oil	US ($)	11.1	2.5%	5.7%	1.3%	2.9%	1.6%	3.1%	0.8%	1.6%	-	-	-	-
Murphy Oil	US ($)	4.9	1.8%	5.3%	1.9%	2.4%	2.2%	6.2%	2.2%	2.8%	-	-	-	-
Noble Energy	US ($)	13.2	4.0%	6.9%	0.6%	0.8%	32.8%	13.4%	78.7%	1.8%	-	-	-	-
Occidental Petroleum	US ($)	53.2	21.4%	20.2%	1.2%	2.4%	11.4%	10.6%	0.6%	1.1%	-	-	-	-
Oil & Natural Gas	India (INR)	28.9	2.0%	1.8%	1.0%	0.8%	-	-	-	-	-	-	-	-
Pioneer Natural Res.	US ($)	17.7	25.8%	8.1%	0.7%	0.6%	39.5%	25.6%	2.4%	2.4%	-	-	-	-
PTT E&P (F)	Thailand (Bt)	8.1	3.8%	4.0%	0.9%	1.2%	-	-	-	-	-	-	-	-
Range Resources	US ($)	6.2	24.7%	4.9%	0.6%	1.2%	362.6%	34.8%	3.4%	15.2%	-	-	-	-
Southwestern Energy	US ($)	5.9	2.4%	9.8%	0.2%	0.4%	247.1%	113.9%	14.5%	49.5%	-	-	-	-
Tullow	UK ($)	2.8	30.2%	99.1%	0.7%	1.6%	-	-	-	-	-	-	-	-
Woodside Petroleum	Australia (A$)	17.4	0.9%	2.0%	0.6%	1.0%	-	-	-	-	-	-	-	-
US			**8.0%**	**22.9%**	**1.1%**	**2.0%**	**57.7%**	**102.6%**	**7.8%**	**11.3%**	**-**	**-**	**-**	**-**
International			**8.1%**	**20.4%**	**1.1%**	**1.4%**	**1.3%**	**1.5%**	**0.8%**	**1.0%**	**-**	**-**	**-**	**-**
Global			**8.1%**	**22.3%**	**1.1%**	**1.8%**	**55.0%**	**97.8%**	**7.4%**	**10.8%**	**-**	**-**	**-**	**-**

Figure 163: 2015E cashflow neutrality ($/bbl Brent)



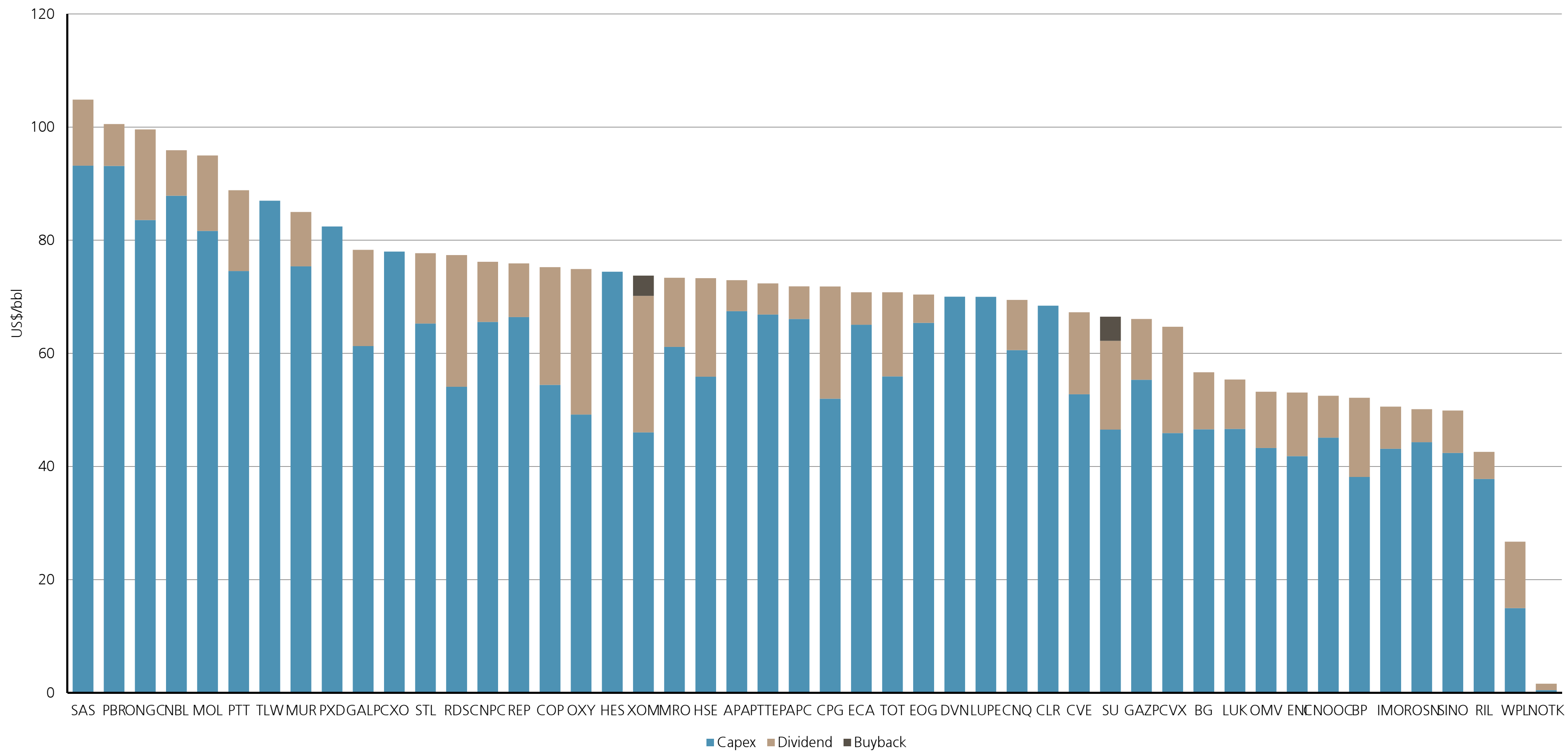
Source: UBS estimates. Note: we define 'cash neutrality' as Brent price required to cover forecast capex, dividends and buybacks with operating cashflow (pre working capital). Not calculated for companies where not meaningful – e.g. Henry-Hub levered gassy US E&Ps. PBR/RIL breakevens neutrality above $200/bbl due to relatively low oil price sensitivity (and material cash shortfalls) in 2015; Repsol >$200/bbl as 2015 capex includes Talisman acquisition. Ex-Talisman outlay Repsol cashflow neutrality is at $129/bbl in 2015.

Figure 164: 2016E cashflow neutrality ($/bbl Brent)



Source: UBS estimates. Note: we define 'cash neutrality' as Brent price required to cover forecast capex, dividends and buybacks with operating cashflow (pre working capital). Not calculated for companies where not meaningful – e.g. Henry-Hub levered gassy US E&Ps.

Figure 165: 2017E cashflow neutrality ($/bbl Brent)



Source: UBS estimates. Note: we define 'cash neutrality' as Brent price required to cover forecast capex, dividends and buybacks with operating cashflow (pre working capital). Not calculated for companies where not meaningful – e.g. Henry-Hub levered gassy US E&Ps.

E&P assets as % of total

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	72%	75%	76%	89%	100%	100%	100%	100%	100%	100%	100%	**88%**	**100%**	**100%**	**100%**
BP	UK ($)	94.0	68%	73%	72%	71%	64%	67%	70%	70%	71%	71%	71%	**70%**	**66%**	**70%**	**71%**
Cenovus	Canada (C$)	11.3	-	-	72%	71%	67%	70%	70%	70%	70%	70%	70%	**70%**	**68%**	**70%**	**70%**
Chevron Corp.	US ($)	144.3	63%	64%	67%	70%	72%	74%	78%	80%	82%	83%	84%	**69%**	**73%**	**79%**	**81%**
Eni	Italy (€)	58.0	55%	57%	56%	55%	57%	58%	59%	60%	60%	60%	59%	**57%**	**58%**	**59%**	**60%**
ExxonMobil	US ($)	302.1	46%	48%	50%	53%	55%	56%	56%	79%	80%	81%	81%	**52%**	**55%**	**67%**	**75%**
GALP	Portugal (€)	8.3	12%	13%	13%	38%	40%	44%	47%	51%	54%	56%	59%	**30%**	**42%**	**49%**	**53%**
Gazprom	Russia ($)	49.6	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
Gazprom Neft	Russia ($)	11.0	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
Husky Energy	Canada (C$)	16.3	77%	77%	75%	78%	78%	78%	78%	78%	78%	78%	78%	**77%**	**78%**	**78%**	**78%**
Imperial Oil	Canada (C$)	27.9	-	-	68%	76%	82%	84%	84%	84%	84%	84%	84%	**78%**	**83%**	**84%**	**84%**
Lukoil	Russia ($)	27.4	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
MOL	Hungary (HUF)	4.8	32%	31%	30%	30%	31%	31%	32%	32%	33%	33%	34%	**31%**	**31%**	**32%**	**33%**
Novatek	Russia ($)	28.2	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
OMV	Austria (€)	8.1	-	-	46%	51%	52%	63%	68%	70%	70%	70%	71%	**53%**	**58%**	**69%**	**70%**
Petrobras (PN)	Brazil (BrR)	31.6	-2%	-1%	0%	0%	1%	1%	1%	1%	1%	1%	1%	**0%**	**1%**	**1%**	**1%**
PetroChina	China (Rmb)	238.2	58%	58%	58%	58%	58%	58%	59%	60%	61%	62%	63%	**58%**	**58%**	**60%**	**61%**
PTT Public Company	Thailand (Bt)	20.7	27%	26%	32%	37%	39%	34%	33%	32%	29%	29%	30%	**0%**	**0%**	**0%**	**0%**
Reliance Industries	India (INR)	36.9	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
Repsol	Spain (€)	18.4	20%	18%	18%	23%	34%	37%	58%	59%	61%	62%	63%	**26%**	**36%**	**59%**	**61%**
Rosneft	Russia ($)	38.9	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
Royal Dutch Shell	UK (p)	156.1	52%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	**50%**	**50%**	**50%**	**50%**
Sasol	S.Africa (Rd)	18.8	8%	7%	13%	15%	13%	15%	14%	12%	12%	12%	12%	**13%**	**14%**	**13%**	**12%**
Sinopec	China (Rmb)	89.5	43%	47%	48%	49%	50%	51%	51%	51%	51%	51%	52%	**49%**	**50%**	**51%**	**51%**
Statoil	Norway (Nkr)	46.3	83%	83%	87%	87%	88%	88%	88%	89%	89%	89%	89%	**86%**	**88%**	**88%**	**89%**
Suncor Energy	Canada (C$)	38.2	86%	-	85%	86%	85%	85%	85%	85%	85%	85%	85%	**85%**	**85%**	**85%**	**85%**
Surgutneftegaz	Russia ($)	22.4	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
TOTAL	France ($)	102.1	63%	66%	73%	77%	81%	82%	84%	84%	84%	84%	84%	**76%**	**82%**	**84%**	**84%**
Global			**51%**	**51%**	**53%**	**56%**	**58%**	**60%**	**62%**	**67%**	**68%**	**68%**	**69%**	**56%**	**59%**	**65%**	**67%**
Big Five			**56%**	**57%**	**59%**	**60%**	**62%**	**63%**	**64%**	**73%**	**74%**	**74%**	**75%**	**60%**	**62%**	**69%**	**72%**
US			**55%**	**54%**	**60%**	**62%**	**64%**	**66%**	**66%**	**80%**	**81%**	**81%**	**82%**	**61%**	**65%**	**73%**	**78%**
Europe			**60%**	**61%**	**62%**	**65%**	**65%**	**67%**	**69%**	**69%**	**69%**	**70%**	**70%**	**64%**	**66%**	**69%**	**69%**
EM			**37%**	**35%**	**34%**	**36%**	**38%**	**39%**	**47%**	**48%**	**49%**	**49%**	**50%**	**36%**	**39%**	**47%**	**48%**

E&P profits as % of total

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	50%	54%	63%	61%	65%	60%	44%	74%	80%	79%	77%	60%	62%	59%	71%
BP	UK ($)	94.0	95%	87%	87%	86%	90%	82%	37%	57%	66%	68%	69%	86%	86%	47%	60%
Cenovus	Canada (C$)	11.3	131%	100%	76%	67%	72%	123%	142%	29%	87%	92%	85%	88%	97%	86%	87%
Chevron Corp.	US ($)	144.3	105%	94%	94%	92%	97%	91%	35%	74%	91%	94%	96%	93%	94%	54%	78%
Eni	Italy (€)	58.0	72%	79%	88%	94%	117%	100%	95%	80%	83%	86%	87%	96%	108%	87%	86%
ExxonMobil	US ($)	302.1	89%	79%	84%	77%	82%	84%	47%	58%	71%	77%	81%	81%	83%	52%	66%
GALP	Portugal (€)	8.3	26%	14%	33%	42%	39%	38%	16%	34%	60%	72%	80%	33%	39%	25%	52%
Gazprom	Russia ($)	49.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gazprom Neft	Russia ($)	11.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Husky Energy	Canada (C$)	16.3	73%	92%	61%	47%	51%	77%	-246%	3%	66%	73%	69%	66%	64%	-121%	-7%
Imperial Oil	Canada (C$)	27.9	81%	80%	66%	38%	56%	41%	-43%	6%	44%	50%	57%	56%	49%	-19%	23%
Lukoil	Russia ($)	27.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOL	Hungary (HUF)	4.8	117%	84%	110%	103%	104%	53%	4%	-7%	19%	40%	48%	91%	78%	-1%	21%
Novatek	Russia ($)	28.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OMV	Austria (€)	8.1	106%	85%	86%	83%	79%	74%	15%	38%	67%	76%	79%	81%	77%	27%	55%
Petrobras (PN)	Brazil (BrR)	31.6	68%	98%	136%	213%	187%	196%	60%	50%	95%	107%	117%	166%	192%	55%	86%
PetroChina	China (Rmb)	238.2	73%	82%	120%	123%	101%	110%	57%	68%	83%	86%	86%	107%	105%	63%	76%
PTT Public Company	Thailand (Bt)	20.7	54%	59%	62%	77%	82%	76%	61%	50%	54%	60%	63%	1%	1%	1%	1%
Reliance Industries	India (INR)	36.9	12%	27%	35%	27%	16%	11%	12%	8%	11%	13%	14%	23%	13%	10%	12%
Repsol	Spain (€)	18.4	33%	31%	30%	53%	48%	47%	-15%	41%	64%	72%	74%	42%	48%	13%	47%
Rosneft	Russia ($)	38.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Royal Dutch Shell	UK (p)	156.1	81%	79%	83%	79%	77%	72%	21%	35%	52%	58%	62%	78%	75%	28%	45%
Sasol	S.Africa (Rd)	18.8	11%	4%	2%	5%	5%	6%	9%	16%	15%	16%	14%	4%	5%	12%	14%
Sinopec	China (Rmb)	89.5	26%	45%	68%	71%	57%	64%	-5%	-2%	21%	25%	29%	61%	60%	-4%	13%
Statoil	Norway (Nkr)	46.3	86%	88%	93%	91%	94%	88%	74%	79%	87%	89%	90%	91%	91%	77%	84%
Suncor Energy	Canada (C$)	38.2	91%	88%	79%	62%	70%	78%	-10%	41%	68%	71%	79%	76%	74%	15%	50%
Surgutneftegaz	Russia ($)	22.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	France ($)	102.1	94%	92%	95%	91%	88%	83%	48%	56%	74%	78%	79%	89%	85%	52%	67%
Global			**76%**	**77%**	**88%**	**90%**	**86%**	**85%**	**35%**	**51%**	**68%**	**72%**	**74%**	**85%**	**85%**	**43%**	**60%**
Big Five			**92%**	**84%**	**87%**	**83%**	**86%**	**82%**	**39%**	**56%**	**71%**	**75%**	**78%**	**85%**	**84%**	**47%**	**64%**
US			**93%**	**85%**	**84%**	**77%**	**83%**	**84%**	**28%**	**56%**	**75%**	**80%**	**83%**	**83%**	**84%**	**42%**	**64%**
Europe			**81%**	**78%**	**82%**	**82%**	**85%**	**78%**	**42%**	**55%**	**68%**	**72%**	**74%**	**81%**	**81%**	**48%**	**62%**
EM			**56%**	**70%**	**100%**	**118%**	**93%**	**96%**	**35%**	**42%**	**58%**	**62%**	**63%**	**95%**	**95%**	**38%**	**52%**

E&P profit growth ($)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	-52%	17%	37%	-1%	-3%	-23%	-75%	183%	110%	18%	12%	3%	-14%	-15%	15%
BP	UK ($)	94.0	-45%	28%	6%	-21%	-12%	-15%	-79%	79%	63%	14%	10%	-4%	-13%	-38%	-5%
Cenovus	Canada (C$)	11.3	-	-26%	0%	-13%	7%	42%	+/-	+/-	1871%	36%	-3%	0%	23%	-85%	-10%
Chevron Corp.	US ($)	144.3	-52%	74%	40%	-12%	-4%	-23%	-89%	114%	132%	23%	18%	10%	-14%	-52%	-5%
Eni	Italy (€)	58.0	-48%	36%	23%	8%	-18%	-22%	-75%	14%	105%	28%	17%	3%	-20%	-46%	-2%
ExxonMobil	US ($)	302.1	-49%	41%	43%	-14%	-10%	-7%	-70%	14%	60%	14%	8%	8%	-8%	-42%	-8%
GALP	Portugal (€)	8.3	-55%	-13%	121%	74%	-3%	29%	-53%	100%	161%	63%	54%	33%	12%	-3%	44%
Gazprom	Russia ($)	49.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gazprom Neft	Russia ($)	11.0	-45%	35%	49%	-9%	9%	-16%	-36%	37%	57%	11%	-7%	11%	-4%	-6%	7%
Husky Energy	Canada (C$)	16.3	-69%	13%	32%	-32%	0%	2%	+/-	+/-	4087%	10%	13%	+/-	+/-	-87%	-4%
Imperial Oil	Canada (C$)	27.9	-58%	42%	34%	-21%	-14%	-3%	+/-	+/-	1105%	16%	34%	5%	-8%	-73%	6%
Lukoil	Russia ($)	27.4	-29%	18%	14%	7%	-27%	-30%	-31%	13%	72%	2%	8%	-6%	-29%	-12%	8%
MOL	Hungary (HUF)	4.8	-2%	98%	16%	-24%	-34%	-42%	-89%	+/-	+/-	158%	30%	-8%	-38%	+/-	9%
Novatek	Russia ($)	28.2	-18%	54%	184%	-41%	64%	-24%	-30%	50%	25%	7%	5%	26%	12%	3%	8%
OMV	Austria (€)	8.1	-44%	31%	8%	22%	-24%	-20%	-91%	166%	191%	39%	17%	1%	-22%	-50%	3%
Petrobras (PN)	Brazil (BrR)	31.6	-51%	66%	43%	-5%	-16%	-17%	-76%	30%	135%	28%	21%	9%	-16%	-44%	2%
PetroChina	China (Rmb)	238.2	-56%	48%	50%	0%	-10%	-2%	-73%	12%	102%	28%	17%	15%	-6%	-45%	-2%
PTT Public Company	Thailand (Bt)	20.7	-40%	60%	36%	22%	6%	-18%	-63%	-10%	39%	12%	13%	18%	-7%	-42%	-10%
Reliance Industries	India (INR)	36.9	80%	-4%	253%	-13%	-41%	-31%	11%	-13%	55%	44%	34%	4%	-36%	-2%	23%
Repsol	Spain (€)	18.4	-62%	58%	-7%	63%	-20%	-36%	+/-	+/-	158%	28%	11%	4%	-28%	-12%	23%
Rosneft	Russia ($)	38.9	-30%	48%	18%	-29%	54%	-5%	-38%	28%	41%	3%	12%	12%	21%	-11%	5%
Royal Dutch Shell	UK (p)	156.1	-63%	70%	43%	-3%	-25%	9%	-82%	73%	105%	23%	19%	14%	-9%	-45%	-2%
Sasol	S.Africa (Rd)	18.8	22%	-20%	-3%	19%	29%	10%	-25%	-1%	75%	36%	21%	6%	19%	-14%	16%
Sinopec	China (Rmb)	89.5	-64%	103%	56%	0%	-20%	-15%	+/-	61%	+/-	43%	26%	17%	-18%	-	-4%
Statoil	Norway (Nkr)	46.3	-45%	18%	43%	1%	-13%	-27%	-65%	20%	70%	14%	6%	1%	-21%	-35%	-3%
Suncor Energy	Canada (C$)	38.2	-79%	318%	45%	-23%	13%	14%	+/-	+/-	163%	0%	51%	43%	13%	-54%	-3%
Surgutneftegaz	Russia ($)	22.4	-16%	21%	51%	-7%	-10%	-23%	-12%	6%	23%	-10%	-8%	4%	-16%	-3%	-1%
TOTAL	France ($)	102.1	-48%	30%	35%	-10%	-16%	-28%	-68%	3%	112%	26%	11%	-1%	-22%	-42%	0%
Global			-46%	50%	41%	-7%	-6%	-12%	-59%	40%	134%	21%	15%	6%	-12%	-37%	0%
Big Five			-51%	48%	35%	-12%	-13%	-10%	-76%	49%	91%	20%	14%	4%	-14%	-43%	-4%
US			-52%	67%	41%	-15%	-6%	-10%	-75%	39%	304%	16%	17%	9%	-8%	-49%	-6%
Europe			-50%	39%	28%	-3%	-17%	-12%	-76%	61%	102%	25%	15%	2%	-18%	-39%	0%
EM			-39%	50%	53%	-4%	3%	-13%	-36%	25%	71%	21%	15%	10%	-9%	-30%	2%

Upstream capex (US$m)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	7,648	8,960	10,277	10,801	12,234	9,824	5,997	6,016	5,955	5,960	6,427	5%	-5%	-22%	-8%
BP	UK ($)	94.0	14,896	13,495	24,053	17,859	19,115	19,772	16,500	14,850	14,125	14,245	14,571	6%	5%	-13%	-6%
Cenovus	Canada (C$)	11.3	-960	-1,349	2,203	3,060	3,074	2,826	1,581	1,300	1,709	2,055	2,041	-224%	-4%	-32%	-6%
Chevron Corp.	US ($)	144.3	17,109	18,904	25,872	30,444	37,858	37,115	31,600	26,690	23,301	24,466	25,300	17%	10%	-15%	-7%
Eni	Italy (€)	58.0	13,233	12,789	13,135	13,250	13,909	13,990	11,891	10,702	10,699	11,437	11,552	1%	3%	-13%	-4%
ExxonMobil	US ($)	302.1	20,704	27,319	33,091	36,084	38,231	32,728	27,300	26,311	24,487	24,487	24,732	10%	-5%	-10%	-5%
GALP	Portugal (€)	8.3	269	451	401	830	960	1,327	1,329	1,459	1,528	1,619	1,642	38%	26%	5%	4%
Gazprom	Russia ($)	49.6	9,572	10,225	11,085	10,980	15,101	12,557	11,002	12,048	9,264	10,266	10,079	6%	7%	-2%	-4%
Gazprom Neft	Russia ($)	11.0	2,053	2,430	2,365	2,914	4,502	4,970	4,035	3,610	3,845	0	4,230	19%	31%	-15%	-3%
Husky Energy	Canada (C$)	16.3	-2,046	-3,080	4,326	4,106	4,264	4,257	2,324	2,222	3,045	3,346	3,152	-216%	2%	-28%	-6%
Imperial Oil	Canada (C$)	27.9	0	0	3,923	5,518	6,024	4,907	3,061	2,655	2,900	3,452	3,635	-	-6%	-26%	-6%
Lukoil	Russia ($)	27.4	6,523	6,611	8,255	12,568	15,806	14,643	10,921	9,716	11,775	12,124	13,181	18%	8%	-19%	-2%
MOL	Hungary (HUF)	4.8	924	592	551	621	512	666	595	687	756	801	824	-6%	4%	2%	4%
Novatek	Russia ($)	28.2	603	859	1,278	1,398	1,857	1,663	909	432	429	430	442	22%	9%	-49%	-23%
OMV	Austria (€)	8.1	2,123	2,016	3,561	2,666	3,361	3,922	2,257	2,508	2,622	2,850	3,021	13%	21%	-20%	-5%
Petrobras (PN)	Brazil (BrR)	31.6	15,462	18,422	20,457	21,883	27,496	24,072	21,122	19,637	19,669	19,152	18,605	9%	5%	-10%	-5%
PetroChina	China (Rmb)	238.2	8,360	11,228	13,633	16,469	18,785	20,972	19,587	19,535	20,202	20,926	21,693	20%	13%	-3%	1%
PTT Public Company	Thailand (Bt)	20.7	1,790	2,419	2,228	4,115	4,807	3,102	2,744	2,468	2,370	2,052	2,052	12%	-13%	-11%	-8%
Reliance Industries	India (INR)	36.9	1,500	1,500	1,500	300	500	1,500	2,630	1,536	1,500	1,782	1,041	0%	124%	1%	-7%
Repsol	Spain (€)	18.4	1,465	1,486	2,528	3,115	3,077	3,779	13,648	5,182	5,209	5,377	5,541	21%	10%	17%	8%
Rosneft	Russia ($)	38.9	5,867	6,341	8,172	8,683	10,803	9,183	7,028	8,113	9,327	10,288	9,264	9%	3%	-6%	0%
Royal Dutch Shell	UK (p)	156.1	25,669	20,723	20,445	27,494	30,512	25,481	25,661	24,338	25,366	25,892	26,592	0%	-4%	-2%	1%
Sasol	S.Africa (Rd)	18.8	443	375	738	1,453	1,215	1,104	613	573	611	430	466	20%	-13%	-28%	-16%
Sinopec	China (Rmb)	89.5	7,946	7,922	9,094	12,424	17,124	12,831	10,656	8,897	10,560	11,428	13,199	10%	2%	-17%	1%
Statoil	Norway (Nkr)	46.3	11,812	11,680	22,439	17,750	18,373	18,480	16,052	15,227	14,762	14,635	14,276	9%	2%	-9%	-5%
Suncor Energy	Canada (C$)	38.2	0	0	5,912	6,218	5,794	5,645	4,981	4,887	4,218	3,057	3,339	-	-5%	-7%	-10%
Surgutneftegaz	Russia ($)	22.4	3,924	4,578	5,846	5,974	5,800	5,116	3,962	4,140	5,170	5,533	5,400	5%	-7%	-10%	1%
TOTAL	France ($)	102.1	11,036	13,208	21,689	19,669	22,396	15,800	18,908	14,976	16,171	17,415	17,806	7%	-10%	-3%	2%
Global			**187,925**	**200,104**	**279,057**	**298,644**	**343,490**	**312,232**	**278,894**	**250,716**	**251,576**	**255,505**	**264,104**	**11%**	**2%**	**-10%**	**-3%**
Big Five			**89,414**	**93,649**	**125,150**	**131,550**	**148,112**	**130,896**	**119,969**	**107,165**	**103,449**	**106,505**	**109,002**	**8%**	**0%**	**-10%**	**-4%**
US			**34,807**	**41,794**	**75,327**	**85,430**	**95,245**	**87,478**	**70,847**	**64,065**	**59,660**	**60,863**	**62,200**	**20%**	**1%**	**-14%**	**-7%**
Europe			**89,075**	**85,400**	**119,079**	**114,054**	**124,449**	**113,041**	**112,839**	**95,946**	**97,192**	**100,230**	**102,251**	**5%**	**0%**	**-8%**	**-2%**
EM			**64,043**	**72,911**	**84,651**	**99,160**	**123,796**	**111,713**	**95,208**	**90,706**	**94,724**	**94,412**	**99,653**	**12%**	**6%**	**-10%**	**-2%**

R&M assets as % of total

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
BP	UK ($)	94.0	31%	33%	32%	29%	27%	18%	16%	17%	18%	18%	19%	**28%**	**23%**	**16%**	**17%**
Cenovus	Canada (C$)	11.3	-	-	22%	21%	22%	22%	22%	22%	22%	22%	22%	**22%**	**22%**	**22%**	**22%**
Chevron Corp.	US ($)	144.3	26%	22%	20%	18%	17%	15%	13%	12%	11%	10%	9%	**19%**	**16%**	**13%**	**11%**
Eni	Italy (€)	58.0	10%	9%	12%	13%	12%	12%	11%	11%	11%	10%	10%	**12%**	**12%**	**11%**	**11%**
ExxonMobil	US ($)	302.1	23%	21%	19%	17%	16%	15%	14%	19%	18%	18%	18%	**18%**	**15%**	**16%**	**17%**
GALP	Portugal (€)	8.3	63%	65%	65%	46%	45%	43%	41%	40%	38%	37%	35%	**53%**	**44%**	**41%**	**38%**
Gazprom	Russia ($)	49.6	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
Gazprom Neft	Russia ($)	11.0	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
Husky Energy	Canada (C$)	16.3	29%	27%	21%	18%	18%	18%	18%	18%	18%	18%	18%	**20%**	**18%**	**18%**	**18%**
Imperial Oil	Canada (C$)	27.9	-	-	26%	22%	15%	14%	14%	14%	14%	14%	14%	**19%**	**15%**	**14%**	**14%**
Lukoil	Russia ($)	27.4	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
MOL	Hungary (HUF)	4.8	40%	40%	47%	46%	45%	44%	42%	41%	39%	38%	36%	**44%**	**44%**	**41%**	**39%**
Novatek	Russia ($)	28.2	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
OMV	Austria (€)	8.1	-	-	40%	36%	33%	26%	23%	22%	21%	20%	20%	**34%**	**30%**	**22%**	**21%**
Petrobras (PN)	Brazil (BrR)	31.6	-73%	27%	24%	27%	28%	26%	27%	26%	25%	24%	25%	**26%**	**27%**	**27%**	**25%**
PetroChina	China (Rmb)	238.2	17%	17%	17%	17%	17%	17%	16%	16%	15%	15%	15%	**17%**	**17%**	**16%**	**15%**
PTT Public Company	Thailand (Bt)	20.7	-91%	9%	8%	8%	8%	8%	8%	8%	8%	8%	8%	**8%**	**8%**	**8%**	**8%**
Reliance Industries	India (INR)	36.9	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
Repsol	Spain (€)	18.4	35%	34%	35%	35%	44%	38%	26%	25%	25%	24%	23%	**37%**	**41%**	**26%**	**25%**
Rosneft	Russia ($)	38.9	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
Royal Dutch Shell	UK (p)	156.1	17%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	**15%**	**15%**	**15%**	**15%**
Sasol	S.Africa (Rd)	18.8	32%	36%	36%	35%	35%	34%	31%	28%	26%	26%	26%	**35%**	**34%**	**30%**	**27%**
Sinopec	China (Rmb)	89.5	34%	32%	32%	33%	32%	32%	33%	33%	33%	33%	32%	**32%**	**32%**	**33%**	**33%**
Statoil	Norway (Nkr)	46.3	8%	8%	4%	3%	3%	2%	1%	1%	0%	0%	-0%	**4%**	**2%**	**1%**	**0%**
Suncor Energy	Canada (C$)	38.2	13%	-	13%	13%	13%	14%	14%	14%	14%	14%	14%	**13%**	**14%**	**14%**	**14%**
Surgutneftegaz	Russia ($)	22.4	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**
TOTAL	France ($)	102.1	26%	23%	18%	15%	10%	7%	6%	5%	5%	5%	5%	**15%**	**9%**	**5%**	**5%**
Global			20%	19%	18%	17%	16%	15%	15%	16%	15%	15%	15%	17%	16%	15%	15%
Big Five			24%	22%	20%	18%	17%	14%	13%	15%	15%	14%	14%	18%	15%	14%	14%
US			23%	22%	19%	18%	16%	15%	14%	16%	16%	15%	15%	18%	16%	15%	15%
Europe			22%	21%	20%	18%	17%	14%	13%	13%	13%	12%	12%	18%	16%	13%	13%
EM			15%	14%	14%	14%	16%	17%	19%	18%	18%	18%	17%	15%	16%	18%	18%

R&M profits as % of total

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BP	UK ($)	94.0	16%	15%	18%	24%	16%	21%	78%	56%	43%	40%	38%	19%	19%	67%	51%
Cenovus	Canada (C$)	11.3	-	-	39%	52%	48%	2%	-	263%	43%	32%	38%	35%	25%	263%	94%
Chevron Corp.	US ($)	144.3	0%	12%	12%	16%	10%	20%	99%	67%	32%	24%	19%	14%	15%	83%	48%
Eni	Italy (€)	58.0	-3%	-1%	-3%	-2%	-4%	-2%	12%	7%	4%	3%	3%	-2%	-3%	10%	6%
ExxonMobil	US ($)	302.1	9%	12%	11%	20%	11%	10%	43%	35%	25%	19%	15%	13%	10%	39%	27%
GALP	Portugal (€)	8.3	31%	43%	6%	10%	0%	13%	49%	35%	18%	12%	7%	15%	7%	42%	24%
Gazprom	Russia ($)	49.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gazprom Neft	Russia ($)	11.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Husky Energy	Canada (C$)	16.3	-	-	47%	60%	58%	34%	431%	119%	44%	37%	39%	50%	46%	275%	134%
Imperial Oil	Canada (C$)	27.9	18%	20%	24%	36%	36%	41%	122%	80%	46%	41%	35%	31%	38%	101%	65%
Lukoil	Russia ($)	27.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOL	Hungary (HUF)	4.8	-16%	15%	-11%	9%	14%	45%	98%	109%	83%	62%	53%	15%	30%	103%	81%
Novatek	Russia ($)	28.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OMV	Austria (€)	8.1	-15%	9%	9%	14%	17%	22%	78%	58%	31%	22%	19%	14%	20%	68%	42%
Petrobras (PN)	Brazil (BrR)	31.6	49%	16%	-28%	-98%	-70%	-60%	109%	85%	31%	16%	4%	-48%	-65%	97%	49%
PetroChina	China (Rmb)	238.2	21%	13%	-23%	-16%	-9%	-11%	17%	22%	15%	13%	11%	-9%	-10%	19%	16%
PTT Public Company	Thailand (Bt)	20.7	9%	11%	10%	7%	7%	6%	20%	19%	15%	14%	13%	0%	0%	0%	0%
Reliance Industries	India (INR)	36.9	52%	30%	37%	40%	53%	52%	57%	60%	48%	31%	27%	42%	53%	58%	44%
Repsol	Spain (€)	18.4	21%	21%	18%	21%	13%	50%	136%	70%	41%	33%	30%	25%	32%	103%	62%
Rosneft	Russia ($)	38.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Royal Dutch Shell	UK (p)	156.1	19%	21%	17%	21%	23%	28%	79%	65%	48%	42%	38%	22%	25%	72%	55%
Sasol	S.Africa (Rd)	18.8	112%	65%	61%	69%	68%	58%	59%	42%	41%	49%	36%	64%	63%	51%	46%
Sinopec	China (Rmb)	89.5	64%	44%	8%	32%	45%	37%	81%	82%	66%	63%	60%	33%	41%	82%	71%
Statoil	Norway (Nkr)	46.3	3%	3%	-0%	2%	1%	-	-	-	-	-	-	1%	1%	-	-
Suncor Energy	Canada (C$)	38.2	-	-	33%	44%	40%	32%	136%	79%	44%	42%	31%	37%	36%	108%	67%
Surgutneftegaz	Russia ($)	22.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	France ($)	102.1	8%	5%	5%	6%	7%	13%	43%	34%	20%	16%	15%	7%	10%	38%	26%
Global			**20%**	**16%**	**6%**	**8%**	**10%**	**13%**	**63%**	**50%**	**31%**	**26%**	**23%**	**10%**	**12%**	**56%**	**39%**
Big Five			**10%**	**13%**	**13%**	**19%**	**13%**	**17%**	**64%**	**49%**	**32%**	**26%**	**23%**	**15%**	**15%**	**57%**	**39%**
US			**7%**	**12%**	**16%**	**24%**	**16%**	**17%**	**81%**	**56%**	**30%**	**24%**	**20%**	**17%**	**16%**	**69%**	**42%**
Europe			**11%**	**12%**	**10%**	**14%**	**12%**	**20%**	**64%**	**49%**	**34%**	**30%**	**27%**	**14%**	**16%**	**56%**	**41%**
EM			**39%**	**21%**	**-10%**	**-20%**	**-3%**	**-1%**	**42%**	**42%**	**30%**	**26%**	**23%**	**-2%**	**-2%**	**42%**	**33%**

R&M profit growth ($)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BP	UK ($)	94.0	9%	35%	23%	7%	-44%	22%	74%	-16%	7%	4%	4%	4%	-17%	21%	11%
Cenovus	Canada (C$)	11.3	-	+/-	+/-	29%	-8%	-97%	1483%	4%	9%	-5%	24%	-25%	-84%	305%	84%
Chevron Corp.	US ($)	144.3	-99%	-	-	26%	-43%	58%	37%	-31%	-11%	-11%	-9%	169%	-5%	-3%	-7%
Eni	Italy (€)	58.0	+/-	55%	-213%	40%	-52%	56%	+/-	-17%	16%	+/-	15%	+/-	18%	+/-	+/-
ExxonMobil	US ($)	302.1	-78%	100%	25%	77%	-56%	-15%	131%	-25%	-8%	-19%	-17%	11%	-39%	32%	1%
GALP	Portugal (€)	8.3	-79%	128%	-87%	146%	-95%	3276%	315%	-30%	-26%	-10%	-14%	3%	29%	71%	11%
Gazprom	Russia ($)	49.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gazprom Neft	Russia ($)	11.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Husky Energy	Canada (C$)	16.3	+/-	-71%	1455%	13%	-12%	-60%	17%	3%	-17%	-17%	28%	13%	-40%	10%	1%
Imperial Oil	Canada (C$)	27.9	-61%	54%	93%	106%	-41%	53%	17%	-11%	-12%	-10%	0%	41%	-5%	2%	-4%
Lukoil	Russia ($)	27.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOL	Hungary (HUF)	4.8	+/-	+/-	+/-	+/-	0%	251%	182%	-10%	-10%	-6%	-8%	-233%	87%	60%	15%
Novatek	Russia ($)	28.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OMV	Austria (€)	8.1	+/-	+/-	8%	97%	-2%	9%	59%	-22%	-12%	-13%	0%	-217%	3%	11%	-1%
Petrobras (PN)	Brazil (BrR)	31.6	+/-	-62%	+/-	-114%	32%	32%	+/-	23%	-55%	-43%	-73%	192%	32%	+/-	165%
PetroChina	China (Rmb)	238.2	+/-	-21%	+/-	33%	36%	-8%	+/-	22%	14%	8%	1%	+/-	17%	+/-	+/-
PTT Public Company	Thailand (Bt)	20.7	+/-	79%	22%	-35%	4%	-21%	51%	-1%	0%	0%	0%	3%	-9%	22%	9%
Reliance Industries	India (INR)	36.9	167%	-36%	-10%	2%	51%	-6%	16%	29%	-4%	-24%	4%	-4%	19%	22%	2%
Repsol	Spain (€)	18.4	-66%	60%	-14%	7%	-45%	149%	74%	-27%	-5%	-8%	-1%	15%	17%	12%	2%
Rosneft	Russia ($)	38.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Royal Dutch Shell	UK (p)	156.1	-66%	100%	10%	24%	-16%	40%	75%	-13%	-1%	-3%	1%	26%	9%	24%	8%
Sasol	S.Africa (Rd)	18.8	0%	-38%	19%	43%	23%	-3%	-42%	-59%	80%	47%	-5%	5%	9%	-51%	-10%
Sinopec	China (Rmb)	89.5	+/-	-17%	-80%	259%	44%	-38%	98%	11%	11%	13%	5%	-12%	-6%	48%	24%
Statoil	Norway (Nkr)	46.3	-19%	-1%	-20%	37%	-40%	50%	-8%	-18%	-4%	-4%	0%	0%	-5%	-13%	-7%
Suncor Energy	Canada (C$)	38.2	-	-	-	49%	-52%	-2%	20%	-1%	0%	0%	0%	-	-25%	10%	4%
Surgutneftegaz	Russia ($)	22.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	France ($)	102.1	-73%	-18%	42%	4%	1%	55%	83%	-31%	-5%	-3%	3%	14%	25%	12%	4%
Global			-46%	25%	17%	40%	-15%	31%	79%	-10%	-2%	-6%	-6%	-4%	7%	26%	8%
Big Five			-59%	65%	24%	36%	-36%	26%	90%	-22%	-4%	-7%	-4%	18%	-11%	18%	5%
US			-84%	92%	98%	58%	-49%	11%	100%	-23%	-9%	-15%	-10%	26%	-28%	15%	-1%
Europe			-37%	42%	-13%	22%	-25%	75%	77%	-19%	0%	-2%	3%	14%	2%	18%	7%
EM			110%	-31%	-38%	42%	35%	-30%	52%	15%	0%	-3%	-14%	-16%	100%	38%	13%

Chemical assets as % of total

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BP	UK ($)	94.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cenovus	Canada (C$)	11.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chevron Corp.	US ($)	144.3	2%	2%	2%	2%	1%	1%	-	-	-	-	-	**2%**	**1%**	-	-
Eni	Italy (€)	58.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ExxonMobil	US ($)	302.1	7%	6%	4%	3%	2%	2%	2%	2%	2%	1%	1%	**4%**	**2%**	**2%**	**2%**
GALP	Portugal (€)	8.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gazprom	Russia ($)	49.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gazprom Neft	Russia ($)	11.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Husky Energy	Canada (C$)	16.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Imperial Oil	Canada (C$)	27.9	-	-	2%	1%	1%	1%	1%	1%	1%	1%	1%	**1%**	**1%**	**1%**	**1%**
Lukoil	Russia ($)	27.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOL	Hungary (HUF)	4.8	6%	6%	-	-	0%	0%	0%	0%	1%	1%	1%	**2%**	**0%**	**0%**	**1%**
Novatek	Russia ($)	28.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OMV	Austria (€)	8.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petrobras (PN)	Brazil (BrR)	31.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PetroChina	China (Rmb)	238.2	13%	13%	13%	13%	13%	13%	12%	12%	12%	12%	11%	**13%**	**13%**	**12%**	**12%**
PTT Public Company	Thailand (Bt)	20.7	14%	13%	13%	13%	12%	17%	17%	16%	16%	15%	16%	**13%**	**14%**	**17%**	**16%**
Reliance Industries	India (INR)	36.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repsol	Spain (€)	18.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rosneft	Russia ($)	38.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Royal Dutch Shell	UK (p)	156.1	8%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	**7%**	**7%**	**7%**	**7%**
Sasol	S.Africa (Rd)	18.8	42%	42%	40%	39%	38%	38%	43%	49%	51%	52%	53%	**40%**	**38%**	**46%**	**50%**
Sinopec	China (Rmb)	89.5	21%	20%	19%	17%	16%	15%	15%	15%	15%	14%	14%	**17%**	**16%**	**15%**	**15%**
Statoil	Norway (Nkr)	46.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Suncor Energy	Canada (C$)	38.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surgutneftegaz	Russia ($)	22.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	France ($)	102.1	12%	11%	8%	9%	9%	10%	10%	11%	11%	11%	11%	**9%**	**10%**	**10%**	**11%**
Global			**10%**	**9%**	**8%**	**7%**	**7%**	**7%**	**8%**	**8%**	**8%**	**8%**	**8%**	**8%**	**7%**	**8%**	**8%**
Big Five			**7%**	**6%**	**5%**	**5%**	**4%**	**4%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**4%**	**5%**	**5%**
US			**6%**	**4%**	**3%**	**3%**	**2%**	**2%**	**2%**	**2%**	**2%**	**1%**	**1%**	**3%**	**2%**	**2%**	**2%**
Europe			**9%**	**9%**	**8%**	**8%**	**8%**	**8%**	**8%**	**9%**	**9%**	**9%**	**9%**	**8%**	**8%**	**8%**	**9%**
EM			**15%**	**15%**	**15%**	**14%**	**14%**	**15%**	**15%**	**14%**	**14%**	**14%**	**13%**	**15%**	**14%**	**14%**	**14%**

Chemical profits as % of total

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BP	UK ($)	94.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cenovus	Canada (C$)	11.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chevron Corp.	US ($)	144.3	4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eni	Italy (€)	58.0	-3%	-1%	-2%	-2%	-3%	-3%	-	-	-	-	-	**-2%**	**-3%**	-	-
ExxonMobil	US ($)	302.1	12%	16%	11%	8%	12%	14%	27%	29%	22%	21%	21%	**12%**	**13%**	**28%**	**24%**
GALP	Portugal (€)	8.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gazprom	Russia ($)	49.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gazprom Neft	Russia ($)	11.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Husky Energy	Canada (C$)	16.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Imperial Oil	Canada (C$)	27.9	3%	3%	4%	3%	6%	6%	19%	14%	9%	9%	7%	**4%**	**6%**	**16%**	**12%**
Lukoil	Russia ($)	27.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOL	Hungary (HUF)	4.8	-12%	0%	-	-	-	-	-	-	-	-	-	**0%**	-	-	-
Novatek	Russia ($)	28.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OMV	Austria (€)	8.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petrobras (PN)	Brazil (BrR)	31.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PetroChina	China (Rmb)	238.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PTT Public Company	Thailand (Bt)	20.7	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	**1%**	**1%**	**1%**	**1%**
Reliance Industries	India (INR)	36.9	37%	42%	38%	37%	30%	32%	30%	31%	41%	55%	58%	**36%**	**31%**	**30%**	**43%**
Repsol	Spain (€)	18.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rosneft	Russia ($)	38.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Royal Dutch Shell	UK (p)	156.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sasol	S.Africa (Rd)	18.8	-18%	29%	33%	20%	9%	18%	25%	44%	44%	35%	43%	**22%**	**14%**	**35%**	**38%**
Sinopec	China (Rmb)	89.5	15%	14%	25%	1%	1%	-3%	26%	22%	15%	13%	12%	**8%**	**-1%**	**24%**	**18%**
Statoil	Norway (Nkr)	46.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Suncor Energy	Canada (C$)	38.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surgutneftegaz	Russia ($)	22.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	France ($)	102.1	2%	6%	3%	6%	8%	8%	16%	18%	11%	10%	9%	**6%**	**8%**	**17%**	**13%**
Global			**6%**	**10%**	**9%**	**6%**	**7%**	**8%**	**22%**	**23%**	**17%**	**16%**	**16%**	**8%**	**8%**	**23%**	**19%**
Big Five			**8%**	**13%**	**9%**	**8%**	**11%**	**13%**	**24%**	**26%**	**20%**	**18%**	**18%**	**11%**	**12%**	**25%**	**21%**
US			**9%**	**15%**	**10%**	**8%**	**11%**	**14%**	**27%**	**28%**	**21%**	**20%**	**20%**	**12%**	**13%**	**27%**	**23%**
Europe			**-1%**	**4%**	**1%**	**2%**	**4%**	**4%**	**16%**	**18%**	**11%**	**10%**	**9%**	**3%**	**4%**	**17%**	**13%**
EM			**6%**	**9%**	**14%**	**4%**	**2%**	**1%**	**17%**	**17%**	**13%**	**11%**	**12%**	**6%**	**2%**	**17%**	**14%**

Chemicals profit growth ($)

Company	Country	M.Cap $ bn	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E	2019E	Hist 5yr	Hist 2yr	Fut 2yr	Fut 5yr
BG Group	UK ($)	49.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BP	UK ($)	94.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cenovus	Canada (C$)	11.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chevron Corp.	US ($)	144.3	125%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eni	Italy (€)	58.0	-2%	75%	-158%	-62%	18%	10%	-	-	-	-	-	5%	14%	-	-
ExxonMobil	US ($)	302.1	-22%	113%	-11%	-25%	17%	13%	1%	-2%	0%	0%	0%	13%	15%	-1%	0%
GALP	Portugal (€)	8.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gazprom	Russia ($)	49.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gazprom Neft	Russia ($)	11.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Husky Energy	Canada (C$)	16.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Imperial Oil	Canada (C$)	27.9	-53%	42%	89%	35%	0%	40%	19%	-2%	0%	0%	0%	38%	18%	8%	3%
Lukoil	Russia ($)	27.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOL	Hungary (HUF)	4.8	+/-	+/-	+/-	-	-	-	-	-	-	-	-	-	-	-	-
Novatek	Russia ($)	28.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OMV	Austria (€)	8.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petrobras (PN)	Brazil (BrR)	31.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PetroChina	China (Rmb)	238.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PTT Public Company	Thailand (Bt)	20.7	548%	-5%	86%	-4%	7%	-52%	52%	2%	-3%	-8%	0%	-3%	-29%	25%	7%
Reliance Industries	India (INR)	36.9	0%	0%	80%	-26%	-19%	6%	-3%	28%	58%	55%	29%	3%	-7%	11%	31%
Repsol	Spain (€)	18.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rosneft	Russia ($)	38.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Royal Dutch Shell	UK (p)	156.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sasol	S.Africa (Rd)	18.8	+/-	+/-	53%	-24%	-45%	138%	-23%	1%	87%	-4%	60%	+/-	14%	-12%	17%
Sinopec	China (Rmb)	89.5	+/-	12%	83%	-95%	-25%	+/-	+/-	-7%	-8%	3%	3%	+/-	+/-	+/-	+/-
Statoil	Norway (Nkr)	46.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Suncor Energy	Canada (C$)	38.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surgutneftegaz	Russia ($)	22.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	France ($)	102.1	-73%	375%	-49%	121%	15%	-21%	6%	2%	2%	2%	2%	38%	-4%	4%	3%
Global			15%	125%	-10%	-9%	5%	12%	4%	1%	5%	5%	6%	31%	5%	9%	16%
Big Five			0%	193%	-21%	17%	16%	3%	3%	-1%	1%	1%	1%	14%	8%	1%	1%
US			23%	108%	-3%	-20%	16%	16%	2%	-2%	0%	0%	0%	11%	15%	0%	0%
Europe			-42%	245%	-93%	50%	16%	-12%	6%	2%	2%	2%	2%	-231%	0%	22%	9%
EM			190%	6%	79%	-57%	-22%	47%	5%	3%	13%	11%	14%	46%	1%	12%	23%

Upstream data

2014 Global upstream summary

- **Total reserves:** Global Oilco has reported ~flat reserves over the last 5 years vs. Integrateds recording a better albeit still lacklustre 4% and independents at 3% with tilt remains towards oil. Integrateds and independents showed almost similar 1P reserve life at ~13 years, highlighting that 1P metrics are largely a function of the timing of capital rather than resource. Reserves recognition may come under pressure at y/ 2015 when lower average prices are incorporated.

- **Oil reserves:** The larger oil proportion of 1P reserves than gas may change over the coming years, especially with the Integrateds. Higher oil production growth rate among the E&Ps emphasises the US constituents' greater exposure to the US tight oil trend.

- **Gas reserves:** The longer reserve life than oil reflects the long life nature of LNG and gas mega-projects. LNG constitutes a significant proportion of Integrated gas reserves and may be impacted by a slowdown in new FIDs in a softer LNG market. Gas reserve growth is not a significant focus for the US E&Ps but is a significant by-product of liquids rich.

- **Reserves replacement (ex. Group acquisitions/disposals):** Five-year and three-year average reserves replacement stand at ~100%, well below the level needed to support any sort of meaningful growth rate. The impact of the US shale gas and tight oil has a meaningful effect on reserve replacement for the E&P sector.

- **Reserves replacement (inc. Group acquisitions/disposals):** Increased portfolio activity among the Integrateds in recent years means that acquisitions/disposals have had a more balanced impact. Reserves replacement of the E&P universe is significantly better – by around ~50% – as many of the US E&Ps have RRR of multiples of production.

- **Reserves replacement (inc. Group & affiliates acquisitions/disposals):** Majors have material portions of their upstream businesses in incorporated JVs and affiliates.

- **Finding costs:** Global majors and E&Ps have almost similar finding costs of ~$6-7/boe but we believe the E&Ps are probably adding significantly more to 2P reserves.

- **Finding and development costs:** Five-year average F&D costs of between $20-$30/boe for the sector emphasise the deterioration in the economics of the industry.

- **Total replacement costs:** At over $20/boe, the industry is unlikely to generate attractive economic returns on investment in the new price environment.

- **Sales realisations:** Sales realisations consistently lie around 60-70% of prevailing Brent crude oil with delta highlighting quality differentials of actual production versus the benchmark and also the fact that ~50% of output is natgas.

- **Production costs:** Production costs rose by ~2/3rds over the course of five years and have been rising pretty much since the start of the last decade; they are now over 4x higher than they were in 2000.

- **Depreciation:** Presently DD&A rates lag F&D costs by >$10/boe on average, suggesting that earnings are overstating the economic returns that are really accruing to the industry.

- **Exploration expense:** 2014 exploration expense for the industry at ~$4/boe with 5-year CAGR at ~55%, implying that a more cautious view of the outlook and the potential shelving of project developments may result in some more significant write-offs through 2015.

- **Technical costs:** E&P technical costs are similar to those of the majors, although the US natgas players record technical costs materially lower than the industry averages.

- **Net income:** At ~$12/boe for the industry, the absence of unit earnings leverage to the higher oil price is clearly visible.

Figure 166: Reserve life (years)

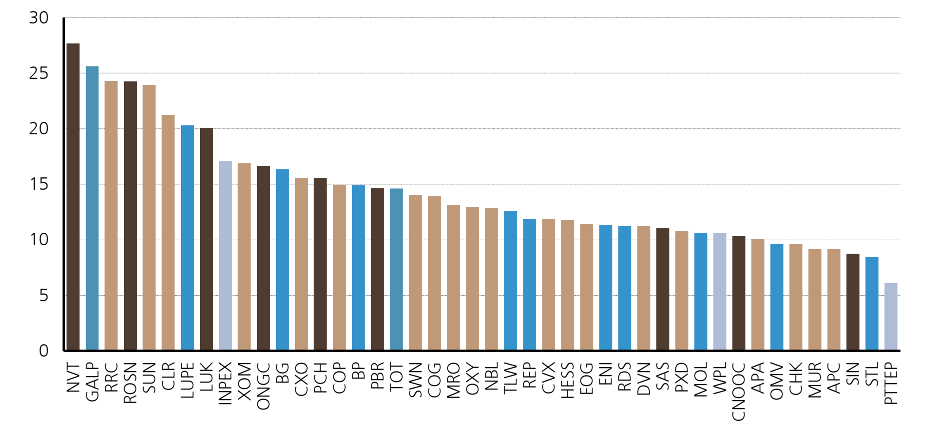


Figure 167: 5-year average finding and development costs per boe

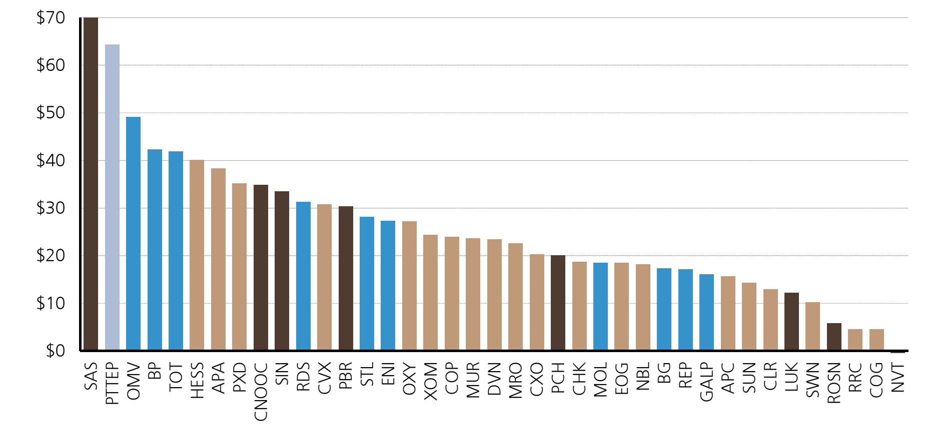


Figure 168: 5-year average technical costs per boe

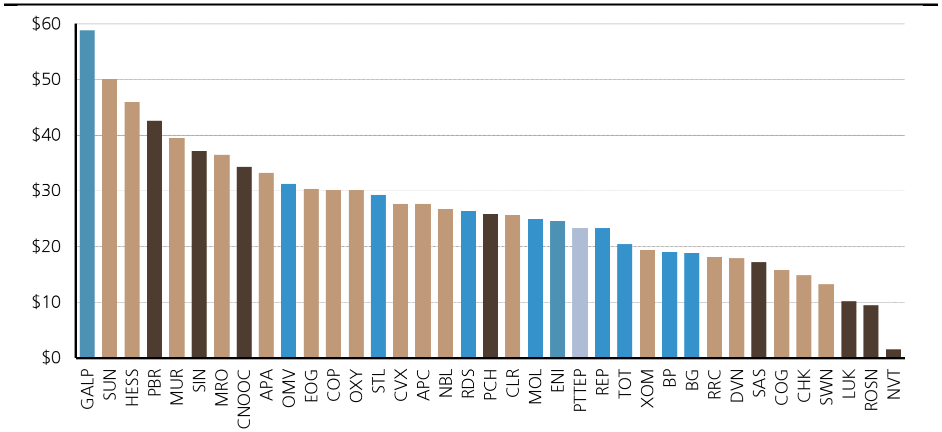
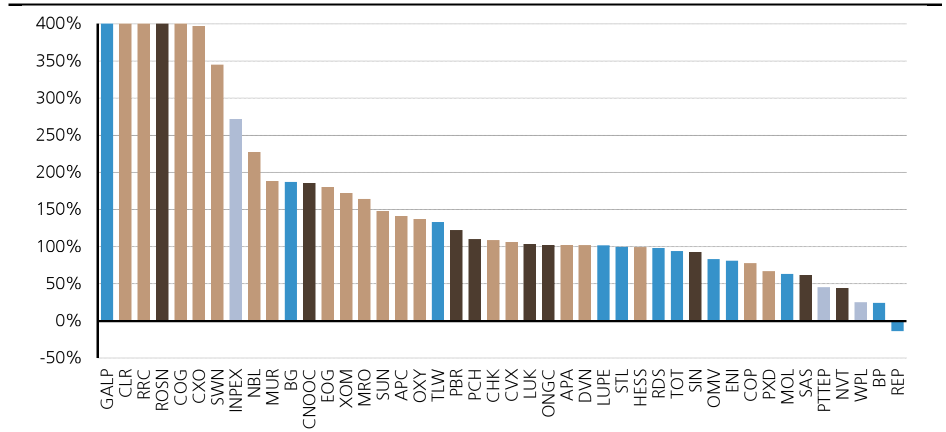


Figure 169: 5-year average replacement rate (incl. aqn/disp)



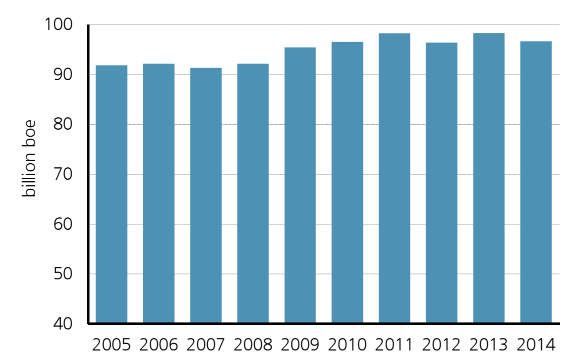
Note: Reserve replacement refers to group (excl. affiliates) / Technical costs = exploration expense + DD&A + production costs / GALP 5 yr reserve replacement 826%, CLR 684%, RRC 604%, ROSN 461%, COG 449% / Repsol not adjusted for YPF / Sasol's 5 yr F&D costs $111/boe

Total reserves

Million boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	R/L 2014	% Oil 2014	% Gas 2014	Growth 1 yr	Growth 5 yr
BG Group	1,288	1,466	1,919	2,104	2,147	2,183	2,149	2,039	2,459	2,600	2,893	3,248	3,431	3,323	3,613	16.3	47%	53%	9%	7%
BP	15,215	16,337	17,577	18,361	18,297	17,893	17,700	17,814	18,147	18,292	18,071	17,748	17,000	17,996	17,522	14.9	56%	44%	-3%	-1%
Chevron	11,493	11,759	11,891	11,964	11,252	11,906	11,620	10,777	11,196	11,315	10,545	11,236	11,347	11,203	11,102	11.8	56%	44%	-1%	0%
Eni	6,000	6,927	7,027	7,274	7,219	6,837	6,436	6,677	6,908	6,571	6,843	7,086	7,166	6,535	6,602	11.3	49%	51%	1%	0%
ExxonMobil	20,872	20,815	21,109	21,203	20,930	21,599	22,828	22,451	22,896	22,986	24,809	24,932	25,164	25,216	25,269	16.9	54%	46%	0%	2%
GALP	-	-	-	-	-	-	-	-	-	24	126	145	154	178	232	25.6	88%	12%	31%	57%
Lukoil	-	16,967	19,573	20,063	20,072	20,330	20,360	20,369	19,334	17,504	17,255	17,269	17,296	17,401	17,585	20.0	77%	23%	1%	0%
MOL Group	-	299	294	303	292	277	253	246	345	447	429	445	405	369	370	10.6	54%	46%	0%	-4%
Novatek	-	-	-	2,351	4,934	4,474	4,564	4,577	4,857	7,954	9,284	9,228	12,163	12,309	12,374	27.7	10%	90%	1%	9%
OMV	338	341	343	410	1,409	1,365	1,289	1,216	1,206	1,188	1,153	1,133	1,118	1,131	1,090	9.6	56%	44%	-4%	-2%
Petrobras	9,763	9,257	10,534	11,640	11,821	11,775	11,380	11,704	11,190	12,151	12,757	12,883	12,895	13,134	13,140	14.6	85%	15%	0%	2%
Petro-Canada	803	821	1,290	1,220	1,213	1,232	1,274	1,315	1,286	-	-	-	-	-	-	-	-	-	-	-
PetroChina	-	17,246	17,692	18,062	18,686	19,898	20,901	21,553	21,771	22,167	22,572	22,620	22,670	22,772	22,851	15.6	46%	54%	0%	1%
Repsol	4,942	5,606	4,668	4,519	4,136	3,328	2,612	2,404	2,209	2,084	2,091	2,179	1,295	1,513	1,539	11.9	29%	71%	2%	-6%
RD/Shell	14,611	13,770	13,720	12,979	11,882	11,466	11,808	10,827	10,915	14,145	14,273	14,266	13,574	13,944	13,081	11.2	47%	53%	-6%	-2%
Rosneft	-	-	-	3,346	12,744	11,813	12,671	14,453	14,446	15,146	15,198	17,617	19,026	41,771	43,090	24.3	71%	29%	3%	23%
Sasol	-	-	-	-	247	245	234	227	213	287	276	271	259	270	252	11.1	3%	97%	-7%	-3%
Sinopec	-	3,816	3,894	3,755	3,790	3,803	3,785	4,116	4,161	4,081	4,001	4,005	4,003	3,960	3,930	8.8	71%	29%	-1%	-1%
Statoil	4,317	4,277	4,267	4,263	4,289	4,296	4,184	6,010	5,584	5,408	5,325	5,426	5,422	5,600	5,359	8.4	44%	56%	-4%	0%
Suncor Energy (incl. Petro-Canada from 2009)	1,357	1,323	1,910	2,594	2,746	3,421	3,881	3,907	3,858	4,182	3,899	4,027	4,099	4,804	4,681	23.9	100%	0%	-3%	2%
TOTAL	10,752	10,984	11,194	11,401	11,148	11,092	11,114	10,456	10,462	10,475	10,684	11,400	11,344	11,527	11,523	14.6	46%	54%	0%	2%
Universe	**101,751**	**152,672**	**151,126**	**160,102**	**171,330**	**171,281**	**172,960**	**173,137**	**173,441**	**179,006**	**182,483**	**187,161**	**189,830**	**214,956**	**215,208**	**14.8**	**55%**	**45%**	**0%**	**4%**
Excluding emerging market	**91,988**	**105,386**	**99,434**	**100,885**	**99,037**	**98,943**	**99,065**	**96,139**	**97,470**	**99,716**	**101,142**	**103,269**	**101,518**	**103,608**	**102,237**	**13.6**	**54%**	**46%**	**-1%**	**1%**
Global OilCo constituents	**89,560**	**91,799**	**93,363**	**94,559**	**91,899**	**91,838**	**92,183**	**91,323**	**92,175**	**95,457**	**96,540**	**98,298**	**96,410**	**98,337**	**96,678**	**13.6**	**54%**	**46%**	**-2%**	**0%**

Note: Gas converted to oil equivalent at between 5,400-5,800cf=1boe for European companies, 6,000cf=1boe for US companies. Reserves include share of reserves of affiliates

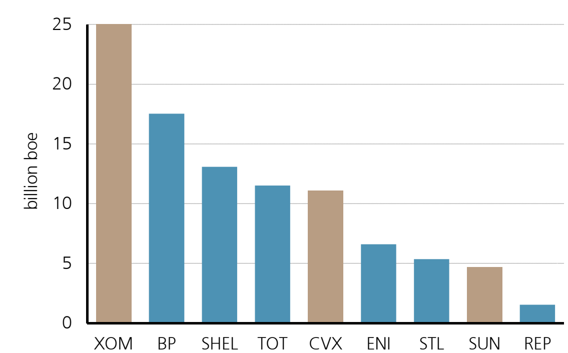
Global OilCo total reserves



Sector comment

- Global Oilco reports roughly flat reserves over the course of the past 5 years while our Integrateds universe records a better albeit still lacklustre 4%. The tilt remains towards oil. 1P reserve life remains healthy at >13 years
- With a dramatic slowdown in project sanction in 2015 and likely 2016 investors should probably expect reserves to fall

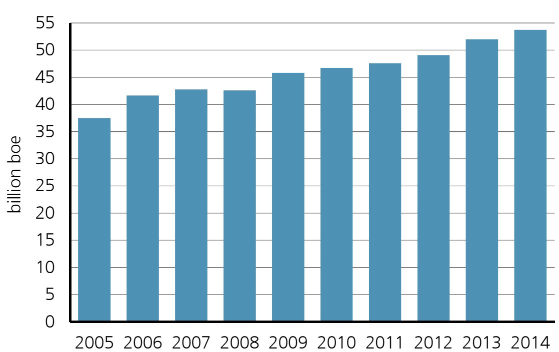
Global OilCo total reserves by company, 2014



Million boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	R/L 2014	% Oil 2014	% Gas 2014	Growth 1 yr	Growth 5 yr
Anadarko	2,062	2,305	2,328	2,514	2,368	2,449	3,012	2,432	2,277	2,304	2,422	2,539	2,560	2,792	2,858	9.1	49%	51%	2%	4%
Apache	1,086	1,267	1,313	1,657	1,937	2,117	2,313	2,446	2,401	2,367	2,953	2,990	2,852	2,646	2,396	10.0	57%	43%	-9%	0%
Cabot	170	192	195	190	200	222	236	269	324	343	450	505	640	909	1,233	13.9	4%	96%	36%	29%
Chesapeake	226	297	368	528	817	1,253	1,493	1,813	2,009	2,376	2,849	3,132	2,615	2,678	2,469	9.6	28%	72%	-8%	1%
CNOOC	1,758	1,820	2,016	2,128	2,229	2,361	2,520	2,594	2,515	2,664	2,995	3,173	3,470	4,400	4,450	10.3	73%	27%	1%	11%
Concho	-	-	-	-	-	18	78	91	137	212	323	387	447	503	637	15.6	58%	42%	27%	25%
ConocoPhillips	5,019	5,132	7,810	7,848	8,488	9,366	11,169	10,475	9,875	10,326	8,310	8,387	8,642	8,921	8,906	14.9	62%	38%	0%	-3%
Continental	45	68	75	84	91	117	118	135	159	257	365	508	785	1,084	1,351	21.3	64%	36%	25%	39%
Devon	1,097	1,620	1,608	2,089	2,081	2,117	2,359	2,497	2,428	2,733	2,874	3,005	2,963	2,963	2,754	11.2	53%	47%	-7%	0%
EOG	637	705	767	869	941	1,032	1,134	1,291	1,448	1,796	1,950	2,054	1,811	2,119	2,497	11.4	64%	36%	18%	7%
Hess	1,121	1,435	1,195	1,035	1,046	1,093	1,243	1,330	1,432	1,437	1,537	1,573	1,554	1,437	1,431	11.7	78%	22%	0%	0%
INPEX	-	-	-	-	977	1,545	1,775	1,770	1,647	1,599	1,476	1,307	2,432	2,188	2,530	17.0	50%	50%	16%	10%
Lundin	-	-	-	-	-	-	-	-	-	-	187	211	202	194	187	20.3	92%	8%	-3%	-
Marathon	1,233	1,230	1,466	1,042	1,139	1,295	1,262	1,225	1,195	1,679	1,638	1,800	2,017	2,171	2,198	13.1	80%	20%	1%	6%
Murphy	318	371	319	289	248	221	263	277	271	439	455	534	604	688	757	9.2	62%	38%	10%	11%
Noble	395	463	468	457	525	806	835	880	864	820	1,092	1,210	1,184	1,406	1,404	12.8	31%	69%	0%	11%
Occidental	2,216	2,242	2,312	2,470	2,532	2,707	2,899	2,870	2,822	3,101	3,166	2,449	2,582	2,738	2,819	12.9	76%	24%	3%	-2%
ONGC	-	-	-	-	-	6,338	6,155	6,375	6,390	6,556	6,390	6,371	6,386	6,417	6,367	16.7	59%	41%	-1%	-1%
Pioneer	628	671	737	789	1,022	987	905	964	960	899	1,011	1,065	1,086	845	799	10.8	65%	35%	-5%	-2%
PTTEP	-	-	-	-	-	-	-	946	944	1,099	1,043	969	901	846	777	6.1	24%	76%	-8%	-8%
Range	97	86	96	114	196	234	293	372	442	521	740	842	1,084	1,367	1,718	24.3	33%	67%	26%	27%
Southwestern	63	67	69	84	108	138	171	242	364	609	823	982	670	1,163	1,791	14.0	9%	91%	54%	24%
Tullow	-	-	-	70	173	192	219	197	314	300	294	298	388	382	345	12.6	89%	11%	-10%	3%
Woodside	-	-	-	980	951	899	1,193	1,227	1,328	1,296	1,309	1,293	1,231	1,143	1,048	10.6	12%	88%	-8%	-4%
Universe	**18,171**	**19,970**	**23,143**	**25,238**	**28,068**	**37,507**	**41,643**	**42,774**	**42,597**	**45,794**	**46,711**	**47,582**	**49,104**	**52,002**	**53,725**	**12.6**	**55%**	**45%**	**3%**	**3%**

Note: Proven + Probable reserves for Tullow, Proven reserves all others. Conversion ratio of 5700cf=1boe for Woodside, 5370cf=1boe for Inpex in 2012, 6000cf=1boe for all others. Reserves include share of reserves of affiliates

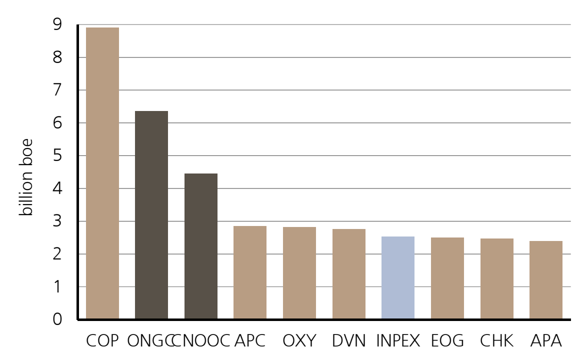
E&P Universe total reserves



Sector comment

- Reserve life of the independents is similar to that of the Majors emphasising that 1P metrics are largely a function of the timing of capital rather than resource
- Oil and gas split is also similar to that of the Integrateds

Top 10 E&P total reserves by company, 2014

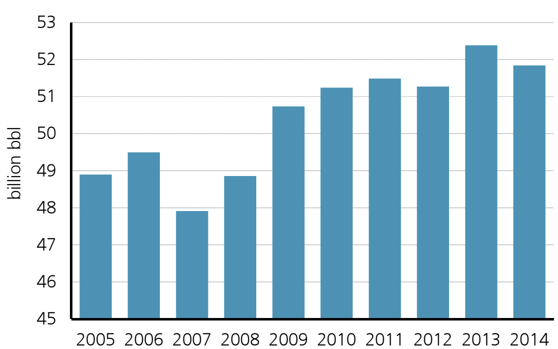


Oil reserves

Million bbl	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	R/L Oil 2014	% Total 2014	Growth 1 yr	Growth 5 yr
BG Group	392	464	522	645	635	572	552	506	688	736	946	1,105	1,401	1,523	1,688	20.9	47%	11%	18%
BP	7,643	8,376	9,165	10,081	9,934	9,565	9,781	10,073	10,353	10,511	10,709	10,565	10,050	10,069	9,817	14.0	56%	-3%	-1%
Chevron	8,519	8,524	8,668	8,599	7,973	8,000	7,806	7,087	7,350	6,973	6,503	6,455	6,481	6,345	6,249	10.0	56%	-2%	-2%
Eni	3,422	3,948	3,783	4,138	4,008	3,773	3,481	3,269	3,385	3,463	3,623	3,434	3,350	3,227	3,226	10.6	49%	0%	-1%
ExxonMobil	11,561	11,491	11,823	12,075	10,870	10,448	11,568	11,074	12,006	11,651	11,673	12,228	12,816	13,239	13,713	17.9	54%	4%	3%
Galp	-	-	-	-	-	-	-	-	-	24	113	119	123	156	203	23.9	88%	31%	53%
Lukoil	-	14,612	15,258	15,977	15,972	16,114	15,927	15,715	14,458	13,696	13,319	13,403	13,381	13,461	13,594	18.7	77%	1%	0%
MOL Group	-	81	82	95	104	101	93	125	152	187	184	205	199	179	200	13.0	54%	12%	1%
Novatek	-	-	-	235	424	381	407	406	452	589	669	768	913	1,173	1,192	23.4	10%	2%	15%
OMV	178	173	173	237	827	782	738	698	696	675	660	628	615	634	616	10.7	56%	-3%	-2%
Petrobras	8,356	7,749	8,955	9,773	9,946	9,717	9,419	9,613	9,155	10,309	10,765	10,812	10,961	11,041	11,117	14.9	85%	1%	2%
Petro-Canada	414	450	830	796	801	866	950	1,022	1,037	-	-	-	-	-	-	-	-	-	-
PetroChina		11,021	10,999	10,981	11,004	11,600	11,682	11,706	11,221	11,263	11,278	11,128	11,018	10,820	10,593	11.2	46%	-2%	-1%
Repsol	2,378	2,295	1,953	1,768	1,582	1,167	1,059	952	902	883	908	978	429	422	441	9.0	29%	5%	-13%
RD/Shell	6,907	6,264	6,640	5,814	4,888	4,636	4,197	3,776	3,443	5,687	6,146	6,048	6,196	6,621	6,130	11.3	47%	-7%	2%
Rosneft	-	-	-	2,864	11,768	10,735	11,823	13,365	13,275	13,931	13,747	14,286	14,592	30,782	30,800	20.5	71%	0%	17%
Sasol	-	-	-	-	8	17	16	14	11	13	9	8	8	9	9	5.0	3%	-6%	-8%
Sinopec	-	3,215	3,320	3,257	3,267	3,294	3,293	3,024	2,961	2,919	2,889	2,848	2,843	2,841	2,772	8.5	71%	-2%	-1%
Statoil	1,994	1,963	1,867	1,789	1,720	1,761	1,674	2,389	2,201	2,175	2,124	2,276	2,388	2,318	2,345	6.6	44%	1%	2%
Suncor Energy (incl. Petro-Canada from 2009)	836	826	1,332	2,061	2,234	2,955	3,462	3,518	3,520	3,808	3,670	3,816	3,956	4,795	4,674	24.1	100%	-3%	4%
TOTAL	6,960	6,961	7,231	7,323	7,003	6,592	6,471	5,778	5,695	5,689	5,987	5,784	5,685	5,413	5,303	14.0	46%	-2%	-1%
Universe	**60,537**	**96,073**	**93,656**	**99,500**	**105,873**	**103,929**	**105,148**	**104,110**	**102,961**	**105,183**	**105,921**	**106,895**	**107,405**	**125,069**	**124,684**	**13.6**	**55%**	**0%**	**3%**
Excluding emerging market	**52,181**	**59,476**	**55,124**	**56,413**	**53,484**	**52,071**	**52,581**	**63,632**	**64,704**	**66,394**	**66,992**	**67,927**	**68,280**	**85,733**	**85,416**	**13.4**	**54%**	**0%**	**5%**
Global OilCo constituents	**50,220**	**50,648**	**52,462**	**53,648**	**50,212**	**48,897**	**49,499**	**47,916**	**48,855**	**50,840**	**51,343**	**51,584**	**51,351**	**52,449**	**51,898**	**13.3**	**54%**	**-1%**	**0%**

Note: Reserves include share of reserves of affiliates

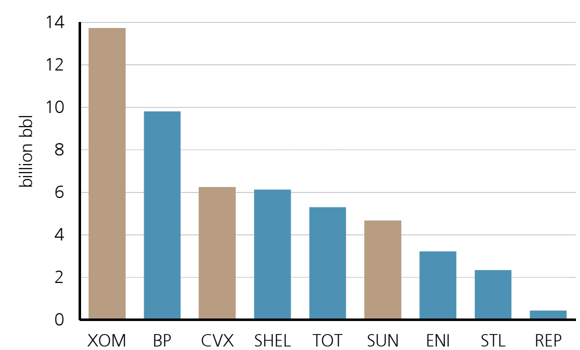
Global OilCo oil reserves



Sector comment

- Oil reserves make up a larger proportion of 1P reserves than gas but this may change over the coming years, especially with the diversified international majors
- Absolute reserves levels may well be reduced when re-calculated at year-end 2015 based on average oil prices for the year

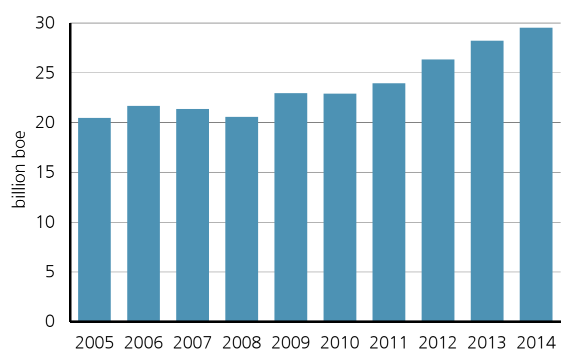
Global OilCo oil reserves by company, 2014



Million bbl	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	R/L 2014	% Total 2014	Growth 1 yr	Growth 5 yr
Anadarko	1,046	1,132	1,131	1,226	1,113	1,130	1,264	1,014	926	1,010	1,069	1,145	1,172	1,258	1,408	9.1	49%	12%	7%
Apache	522	599	637	844	932	976	1,061	1,134	1,081	1,067	1,309	1,369	1,441	1,423	1,356	9.5	57%	-5%	5%
Cabot	10	20	18	12	11	11	8	9	9	8	9	20	24	27	53	13.4	4%	100%	47%
Chesapeake	24	30	38	51	88	103	106	124	121	124	273	546	793	723	687	9.1	28%	-5%	41%
CNOOC	1,216	1,279	1,425	1,436	1,455	1,456	1,486	1,561	1,578	1,670	1,916	2,165	2,383	3,259	3,239	9.3	73%	-1%	14%
Concho	-	-	-	-	-	10	44	53	86	142	211	238	274	307	370	14.1	58%	20%	21%
ConocoPhillips	3,597	3,660	5,137	5,171	5,539	6,189	6,696	6,235	5,717	6,285	4,691	4,901	5,373	5,523	5,489	16.8	62%	-1%	-3%
Continental	35	60	63	73	81	99	98	104	106	173	225	326	561	738	866	19.5	64%	17%	38%
Devon	521	707	636	870	832	901	983	998	781	1,107	1,160	1,257	1,389	1,412	1,473	11.4	53%	4%	6%
EOG	73	72	85	95	100	106	118	179	225	313	538	745	1,021	1,278	1,607	11.9	64%	26%	39%
Hess	766	955	782	646	646	692	832	885	970	967	1,104	1,169	1,171	1,108	1,117	12.6	78%	1%	3%
INPEX	-	-	-	-	360	919	1,090	1,140	1,089	1,049	981	899	981	929	1,277	14.2	50%	37%	4%
Lundin	-	-	-	-	-	-	-	-	-	-	157	183	183	179	173	24.3	92%	-3%	-
Marathon	717	754	903	578	560	704	677	650	636	1,225	1,202	1,356	1,554	1,726	1,768	15.0	80%	2%	8%
Murphy	202	247	232	214	203	182	174	179	174	313	308	350	415	496	472	8.5	62%	-5%	9%
Noble	149	183	201	183	193	291	296	329	311	336	365	369	357	435	432	8.8	31%	-1%	5%
Occidental	1,848	1,897	1,970	2,038	2,036	2,127	2,264	2,229	2,080	2,263	2,310	1,714	1,810	1,951	2,132	13.1	76%	9%	-1%
ONGC	-	-	-	-	-	3,692	3,628	3,654	3,692	3,863	3,736	3,688	3,683	3,781	3,750	16.9	59%	-1%	-1%
Pioneer	312	325	381	423	409	429	417	470	463	482	565	641	719	527	521	10.8	65%	-1%	2%
PTTEP	-	-	-	-	-	-	-	196	201	218	214	275	263	250	187	4.7	24%	-25%	-3%
Range	26	21	23	33	38	47	54	67	73	86	146	174	285	423	565	24.7	33%	34%	46%
Southwestern	8	8	7	8	9	9	8	9	2	1	1	1	0	0	156	335.4	9%	-	-
Tullow	-	-	-	18	131	113	148	133	258	257	248	244	341	327	308	13.4	89%	-6%	4%
Woodside	-	-	-	344	266	281	236	-	-	-	177	169	156	142	125	6.2	12%	-12%	-
Universe	11,073	11,949	13,670	14,264	15,002	20,467	21,688	21,351	20,579	22,959	22,916	23,945	26,350	28,223	29,533	12.6	55%	5%	5%

Note: Proven + Probable reserves for Tullow, Proven reserves all others. Reserves include share of reserves of affiliates

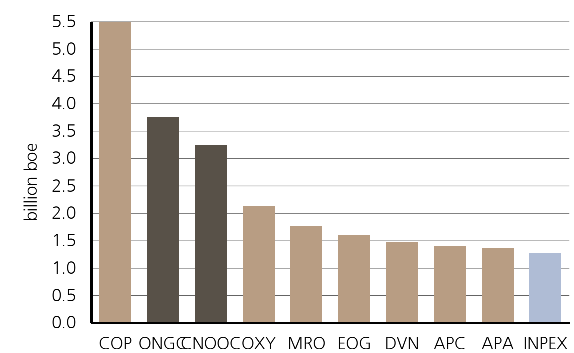
E&P Universe oil reserves



Sector comment

- Higher growth rate among the E&Ps on oil production emphasises the US constituents' greater exposure to the US tight oil trend

Top 10 E&P oil reserves by company, 2014

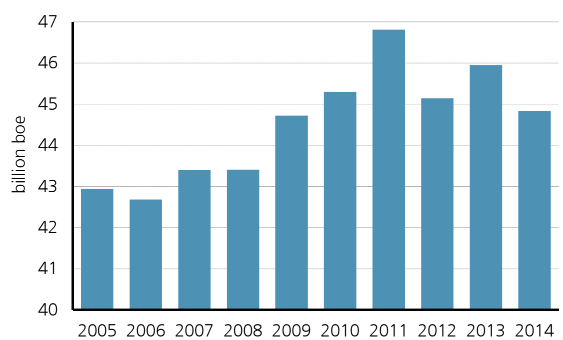


Gas reserves

Million boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	R/L Gas 2014	% Total 2014	Growth 1 yr	Growth 5 yr
BG Group	896	1,002	1,398	1,460	1,513	1,611	1,597	1,533	1,771	1,864	1,948	2,142	2,031	1,800	1,925	13.7	53%	7%	1%
BP	7,572	7,961	8,412	8,280	8,363	8,328	7,919	7,741	7,794	7,781	7,362	7,183	6,949	7,927	7,706	16.2	44%	-3%	0%
Chevron	2,974	3,235	3,223	3,365	3,279	3,906	3,814	3,690	3,846	4,342	4,042	4,781	4,866	4,858	4,853	15.4	44%	0%	2%
Eni	2,578	2,979	3,244	3,136	3,211	3,064	2,955	3,408	3,523	3,108	3,220	3,652	3,816	3,308	3,376	12.0	51%	2%	2%
ExxonMobil	9,311	9,324	9,286	9,128	10,060	11,151	11,260	11,377	10,980	11,335	13,136	12,704	12,349	11,977	11,556	15.9	46%	-4%	0%
GALP	-	-	-	-	-	-	-	-	-	-	14	26	31	22	29	50.5	12%	33%	-
Lukoil	-	2,355	4,315	4,086	4,100	4,216	4,433	4,654	4,876	3,808	3,936	3,866	3,915	3,940	3,991	26.5	23%	1%	1%
MOL Group	-	219	212	209	188	177	160	120	193	260	245	241	206	190	169	8.7	46%	-11%	-8%
Novatek	-	-	-	2,116	4,510	4,093	4,157	4,171	4,405	7,365	8,615	8,460	11,250	11,136	11,182	28.2	90%	0%	9%
OMV	160	167	170	173	582	582	551	518	509	513	493	505	503	497	475	8.6	44%	-4%	-2%
Petrobras	1,407	1,508	1,579	1,867	1,875	2,059	1,961	2,091	2,036	1,842	1,992	2,071	1,934	2,093	2,023	13.3	15%	-3%	2%
Petro-Canada	389	371	460	424	412	366	324	293	249	-	-	-	-	-	-	-	-	-	-
PetroChina	-	6,225	6,693	7,081	7,682	8,298	9,219	9,847	10,550	10,904	11,294	11,492	11,652	11,952	12,258	23.5	54%	3%	2%
Repsol	2,564	3,311	2,715	2,751	2,554	2,161	1,553	1,453	1,307	1,201	1,183	1,201	866	1,091	1,098	13.6	71%	1%	-2%
RD/Shell	7,704	7,506	7,080	7,165	6,994	6,830	7,611	7,051	7,472	8,458	8,127	8,218	7,378	7,323	6,951	11.2	53%	-5%	-4%
Rosneft	-	-	-	482	976	1,078	1,191	1,088	1,171	1,215	1,451	3,331	4,434	10,989	12,290	45	29%	12%	59%
Sasol	-	-	-	-	240	228	218	213	202	274	266	263	251	261	243	11.6	97%	-7%	-2%
Sinopec	-	601	574	498	523	509	492	1,092	1,200	1,162	1,112	1,157	1,160	1,119	1,158	9.4	29%	3%	0%
Statoil	2,323	2,314	2,400	2,474	2,569	2,535	2,510	3,621	3,383	3,233	3,201	3,150	3,034	3,282	3,014	10.8	56%	-8%	-1%
Suncor Energy (incl. Petro-Canada from 2009)	521	497	578	533	512	466	419	389	338	374	229	211	143	9	9	5.3	0%	-2%	-53%
TOTAL	3,792	4,023	3,963	4,078	4,145	4,500	4,643	4,678	4,767	4,786	4,697	5,616	5,659	6,114	6,220	15.2	54%	2%	5%
Universe	**42,190**	**56,599**	**57,470**	**60,602**	**65,458**	**67,353**	**68,156**	**69,026**	**70,570**	**73,822**	**76,562**	**80,267**	**82,425**	**89,888**	**90,528**	**16.4**	**45%**	**1%**	**4%**
Excluding emerging market	**40,783**	**45,911**	**44,310**	**44,472**	**45,553**	**46,872**	**46,484**	**46,960**	**47,302**	**48,468**	**49,348**	**52,959**	**52,263**	**59,647**	**59,917**	**13.9**	**46%**	**0%**	**4%**
Global OilCo constituents	**39,339**	**41,151**	**40,901**	**40,911**	**41,687**	**42,941**	**42,684**	**43,408**	**43,409**	**44,616**	**45,197**	**46,714**	**45,059**	**45,888**	**44,783**	**14.0**	**46%**	**-2%**	**0%**

Note: Gas converted to oil equivalent at between 5,400-5,800cf=1boe for European companies, 6,000cf=1boe for US companies. Reserves include share of reserves of affiliates

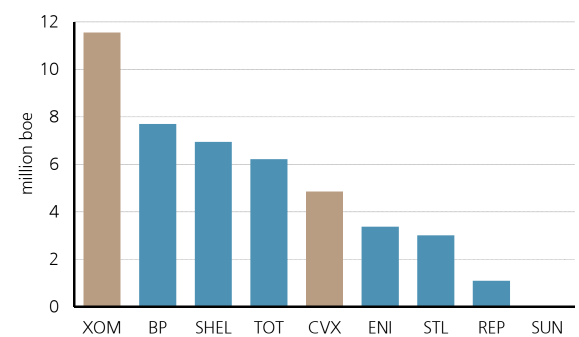
Global OilCo gas reserves



Sector comment

- A significant proportion of the Integrated gas reserves is made up of LNG and may be impacted by a slowdown in new FIDs in a softer LNG market
- The longer than oil reserve life reflects the long life nature of LNG and gas mega projects

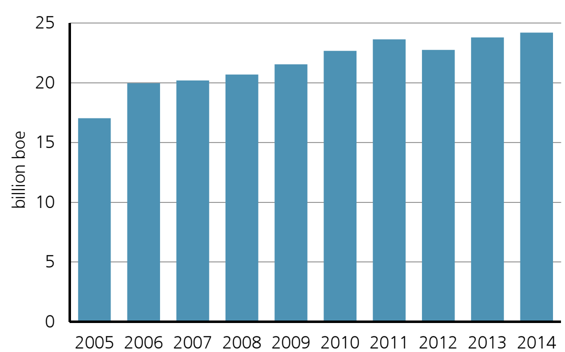
Global OilCo gas reserves by company, 2014



Million boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	R/L 2014	% Total 2014	Growth 1 yr	Growth 5 yr
Anadarko	1,016	1,173	1,197	1,287	1,255	1,318	1,748	1,417	1,351	1,294	1,353	1,393	1,387	1,533	1,450	9.1	51%	-5%	2%
Apache	564	668	676	813	1,005	1,141	1,252	1,312	1,320	1,299	1,645	1,620	1,411	1,223	1,040	10.8	43%	-15%	-4%
Cabot	160	173	177	178	189	210	228	260	314	336	441	485	616	883	1,180	13.9	96%	34%	29%
Chesapeake	202	267	330	477	729	1,150	1,387	1,690	1,888	2,252	2,576	2,586	1,822	1,956	1,782	9.8	72%	-9%	-5%
CNOOC	542	541	591	692	774	905	1,034	1,033	937	994	1,079	1,008	1,087	1,141	1,211	15.0	27%	6%	4%
Concho	-	-	-	-	-	8	33	38	51	69	112	148	174	196	267	18.3	42%	36%	31%
ConocoPhillips	1,422	1,472	2,673	2,677	2,949	3,177	4,473	4,240	4,158	4,041	3,619	3,486	3,269	3,398	3,417	12.6	38%	1%	-3%
Continental	10	9	12	11	10	18	20	30	53	84	140	182	224	346	485	25.4	36%	40%	42%
Devon	576	913	973	1,219	1,249	1,216	1,376	1,499	1,647	1,626	1,714	1,748	1,574	1,551	1,281	11.0	47%	-17%	-5%
EOG	563	633	682	774	841	926	1,016	1,112	1,223	1,483	1,412	1,308	790	841	890	10.6	36%	6%	-10%
Hess	355	480	413	389	400	401	411	445	462	470	433	404	383	329	314	9.5	22%	-5%	-8%
INPEX	-	-	-	-	617	626	685	630	558	550	495	409	1,451	1,259	1,252	21.4	50%	-1%	18%
Lundin	-	-	-	-	-	-	-	-	-	-	30	28	18	15	15	6.9	8%	-3%	-
Marathon	516	476	563	464	579	591	585	575	559	454	436	444	463	445	430	8.7	20%	-3%	-1%
Murphy	116	123	87	75	45	38	89	98	98	126	147	184	190	192	284	10.5	38%	48%	18%
Noble	246	280	267	274	331	515	538	551	553	484	727	841	827	971	972	16.1	69%	0%	15%
Occidental	368	345	342	432	496	580	635	641	742	838	856	735	772	787	688	12.5	24%	-13%	-4%
ONGC	-	-	-	-	-	2,646	2,527	2,721	2,698	2,693	2,654	2,683	2,702	2,636	2,618	16.4	41%	-1%	-1%
Pioneer	316	346	356	366	613	558	488	494	497	416	446	424	366	318	278	10.8	35%	-12%	-8%
PTTEP	-	-	-	-	-	-	-	807	795	942	888	694	638	596	590	6.7	76%	-1%	-9%
Range	71	65	73	81	158	188	239	305	369	436	594	668	799	944	1,154	24.1	67%	22%	21%
Southwestern	55	59	62	76	99	129	163	233	363	608	822	981	669	1,162	1,635	12.8	91%	41%	22%
Tullow	-	-	-	52	43	79	71	64	56	44	47	54	47	55	38	8.3	11%	-31%	-3%
Woodside	-	-	-	636	684	619	956	-	-	-	-	1,124	1,075	1,001	923	11.7	88%	-8%	-
Universe	**7,098**	**8,021**	**9,473**	**10,974**	**13,066**	**17,040**	**19,955**	**20,195**	**20,690**	**21,539**	**22,664**	**23,637**	**22,754**	**23,779**	**24,193**	**12.5**	**45%**	**2%**	**2%**

Note: Proven + Probable reserves for Tullow, Proven reserves all others. Conversion ratio of 5700cf=1boe for Woodside, 5370cf=1boe for Inpex in 2012, 6000cf=1boe for all others. Reserves include share of reserves of affiliates

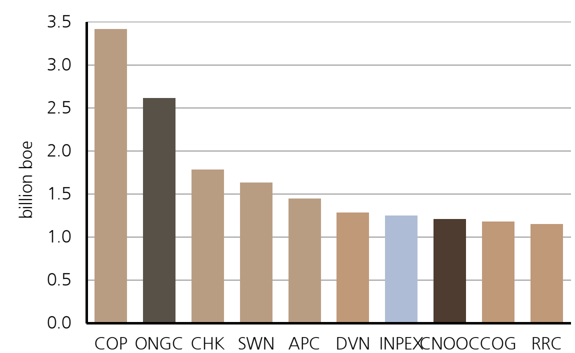
E&P Universe gas reserves



Sector comment

- Gas reserve growth has not been a significant focus for the US independents but is a significant by-product of liquids rich

Top 10 E&P gas reserves by company, 2014

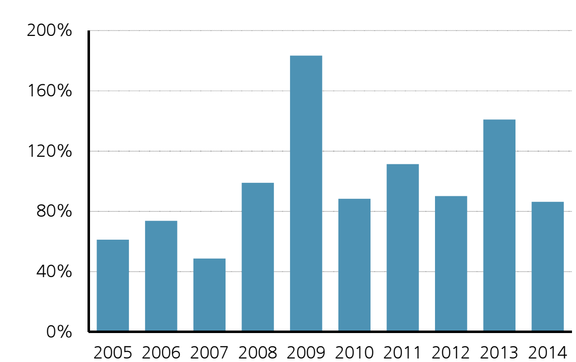


Reserve replacement (ex. Group acquisitions/disposals)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	3 yr	5 yr	1 yr Rank	3 yr Rank	5 yr Rank
BG Group	275%	297%	370%	230%	89%	120%	84%	54%	221%	119%	229%	245%	177%	115%	235%	175%	200%	2	3	2
BP	163%	191%	175%	119%	78%	68%	34%	44%	116%	112%	93%	44%	-2%	105%	29%	43%	55%	19	18	18
Chevron	102%	84%	92%	96%	7%	27%	52%	10%	99%	150%	33%	166%	127%	91%	100%	106%	103%	11	9	11
Eni	153%	133%	131%	119%	94%	26%	65%	13%	131%	91%	106%	32%	85%	109%	112%	102%	89%	9	12	14
ExxonMobil	120%	81%	86%	107%	-19%	85%	68%	105%	76%	292%	83%	143%	130%	133%	139%	134%	125%	5	4	6
GALP	-	-	-	-	-	-	-	-	-	243%	3087%	530%	270%	642%	619%	534%	830%	1	1	1
Lukoil	-14%	138%	408%	171%	62%	95%	77%	106%	-63%	-146%	64%	103%	102%	92%	119%	104%	96%	7	11	12
MOL Group	-	181%	-25%	52%	-5%	62%	18%	114%	-76%	33%	59%	137%	1%	28%	162%	58%	78%	4	16	16
Novatek	-	-	-	-	298%	235%	145%	86%	230%	339%	185%	-540%	53%	-20%	53%	29%	-60%	16	20	20
OMV	59%	120%	90%	69%	89%	34%	49%	39%	91%	85%	68%	66%	50%	32%	65%	49%	56%	15	17	17
Petrobras	113%	25%	308%	143%	125%	94%	47%	132%	36%	212%	172%	115%	102%	127%	117%	115%	126%	8	8	5
Petro-Canada	136%	141%	131%	63%	32%	108%	172%	128%	34%	-	-	-	-	-	-	-	-	-	-	-
PetroChina	-	161%	149%	140%	165%	214%	191%	164%	118%	133%	133%	104%	104%	107%	106%	106%	110%	10	10	8
Repsol	140%	81%	-93%	-53%	10%	-100%	-77%	44%	45%	61%	101%	131%	140%	125%	119%	128%	118%	6	5	7
RD/Shell	76%	91%	34%	60%	39%	67%	166%	26%	146%	420%	135%	129%	56%	160%	51%	89%	106%	17	14	10
Rosneft	-	-	-	-221%	223%	-50%	220%	78%	77%	174%	102%	363%	230%	0%	176%	122%	156%	3	6	4
Sasol	-	-	-	-	-	76%	-5%	43%	-6%	652%	16%	11%	33%	51%	20%	34%	28%	20	19	19
Sinopec	-	124%	126%	54%	111%	104%	95%	197%	73%	79%	80%	101%	100%	90%	93%	94%	93%	13	13	13
Statoil	49%	112%	102%	99%	52%	101%	74%	84%	34%	77%	85%	102%	112%	150%	97%	120%	109%	12	7	9
Suncor Energy (incl. Petro-Canada from 2009)	69%	82%	106%	362%	116%	392%	318%	109%	52%	253%	44%	178%	136%	510%	40%	233%	181%	18	2	3
TOTAL	152%	150%	130%	137%	79%	37%	67%	15%	130%	81%	97%	88%	88%	66%	73%	76%	83%	14	15	15
Universe	**129%**	**110%**	**133%**	**112%**	**60%**	**82%**	**81%**	**78%**	**87%**	**150%**	**104%**	**91%**	**94%**	**120%**	**97%**	**104%**	**101%**			
Excluding emerging market	**120%**	**107%**	**97%**	**106%**	**37%**	**62%**	**74%**	**49%**	**103%**	**180%**	**93%**	**116%**	**93%**	**138%**	**92%**	**107%**	**106%**			
Global OilCo constituents	**118%**	**104%**	**92%**	**104%**	**36%**	**61%**	**74%**	**49%**	**99%**	**183%**	**88%**	**111%**	**90%**	**141%**	**86%**	**106%**	**103%**			

Note: Data excludes share of reserves of affiliates

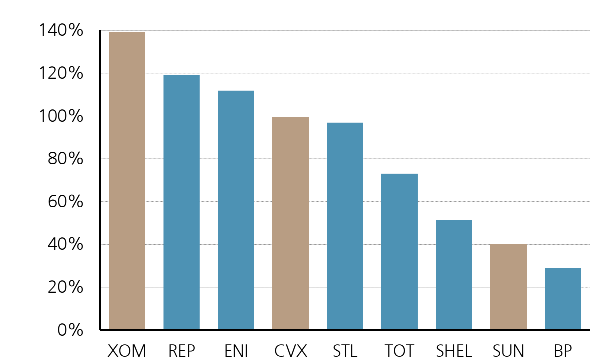
Global OilCo reserve replacement (ex. aqn/disp)



Sector comment

- Average reserve replacement has averaged around 100%, which is well below the level needed to support any sort of meaningful growth rate
- Notably reserve replacement collapsed after the 2003 Shell reserve controversy
- Key question will be what effect a significantly lower oil price will mean on reserves recognition at end-2015

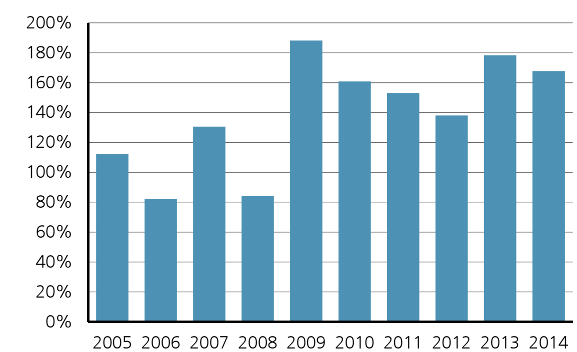
Global OilCo RRR (ex. aqn/disp) by company, 2014



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	3 yr	5 yr	1 yr rank	3 yr rank	5 yr rank
Anadarko	232%	173%	87%	176%	174%	180%	7%	118%	91%	108%	153%	159%	137%	173%	161%	157%	157%	10	12	11
Apache	130%	145%	99%	155%	190%	211%	106%	132%	86%	74%	97%	104%	26%	152%	136%	102%	102%	15	18	21
Cabot	156%	87%	105%	125%	166%	229%	271%	329%	259%	255%	603%	390%	417%	522%	452%	468%	470%	3	4	3
Chesapeake	133%	55%	183%	163%	265%	223%	233%	346%	302%	364%	510%	472%	-26%	202%	154%	112%	238%	14	16	8
CNOOC	102%	165%	110%	127%	149%	104%	100%	144%	71%	160%	109%	96%	186%	128%	115%	140%	126%	17	15	14
Concho	-	-	-	-	-	535%	351%	360%	327%	594%	377%	349%	233%	261%	415%	313%	326%	5	5	4
ConocoPhillips	111%	111%	39%	129%	87%	70%	8%	60%	-21%	150%	90%	121%	72%	152%	85%	103%	104%	20	17	18
Continental	23%	501%	221%	288%	221%	476%	115%	255%	287%	820%	777%	727%	666%	703%	523%	617%	644%	2	2	2
Devon	129%	56%	63%	78%	96%	196%	172%	161%	46%	233%	204%	151%	84%	106%	63%	84%	120%	21	20	16
EOG	115%	157%	163%	156%	181%	199%	202%	245%	247%	313%	248%	210%	8%	270%	283%	198%	208%	7	9	9
Hess	70%	80%	-19%	52%	110%	68%	139%	163%	171%	92%	80%	144%	142%	119%	158%	140%	127%	11	14	13
INPEX	-	-	-	-	185%	-57%	113%	111%	21%	78%	25%	-7%	1012%	34%	426%	501%	297%	4	3	5
Lundin	-	-	-	-	-	-	-	-	-	-	-	265%	-3%	38%	88%	36%	96%	18	23	22
Marathon	-10%	35%	123%	76%	179%	88%	107%	69%	80%	454%	74%	137%	186%	185%	155%	176%	150%	12	10	12
Murphy	105%	231%	3%	62%	94%	49%	227%	144%	105%	389%	118%	221%	179%	243%	237%	221%	202%	8	7	10
Noble	275%	257%	124%	115%	276%	120%	116%	165%	69%	41%	463%	161%	135%	345%	126%	202%	240%	16	8	7
Occidental	120%	114%	106%	128%	114%	121%	45%	71%	-15%	153%	71%	28%	130%	155%	154%	146%	103%	13	13	19
ONGC	-	-	-	-	-	75%	52%	130%	104%	142%	119%	95%	104%	107%	87%	100%	103%	19	19	20
Pioneer	150%	104%	203%	168%	36%	1%	89%	236%	60%	-30%	356%	251%	129%	-222%	202%	40%	122%	9	22	15
PTTEP	-	-	-	-	-	-	-	118%	92%	241%	49%	51%	42%	41%	53%	46%	47%	22	21	23
Range	41%	-35%	188%	130%	181%	267%	328%	424%	337%	486%	862%	849%	681%	636%	587%	628%	689%	1	1	1
Southwestern	187%	144%	199%	311%	354%	398%	382%	474%	523%	591%	430%	299%	-207%	550%	291%	235%	273%	6	6	6
Tullow	-	-	-	-24%	83%	118%	88%	17%	584%	52%	70%	33%	411%	124%	-63%	161%	120%	24	11	17
Woodside	-	-	-	105%	202%	64%	545%	-	-	-	-	76%	30%	4%	10%	14%	26%	23	24	24
Universe	**113%**	**117%**	**79%**	**122%**	**133%**	**112%**	**82%**	**131%**	**84%**	**188%**	**161%**	**153%**	**138%**	**178%**	**168%**	**162%**	**160%**			

Note: Proven + Probable reserves for Tullow, Proven reserves all others. Data excludes share of reserves of affiliates

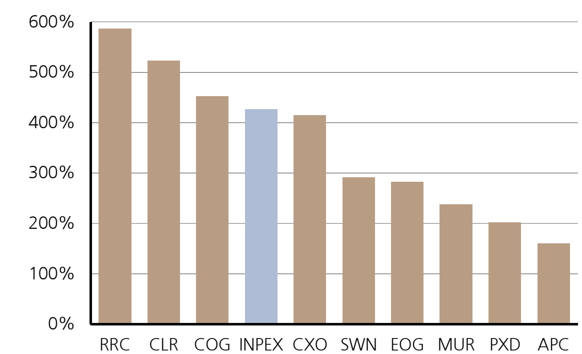
E&P Universe reserve replacement (ex. aqn/disp)



Sector comment

- Obviously the impact of the US shale gas and tight oil has a meaningful effect on reserve replacement for the independent sector
- It will be interesting to see the effect of lower average oil prices on what level of reserves can continue to be recognised by the companies – a fascinating insight into the true economics of the US onshore industry

Top 10 E&P RRR (ex. aqn/disp) by company, 2014

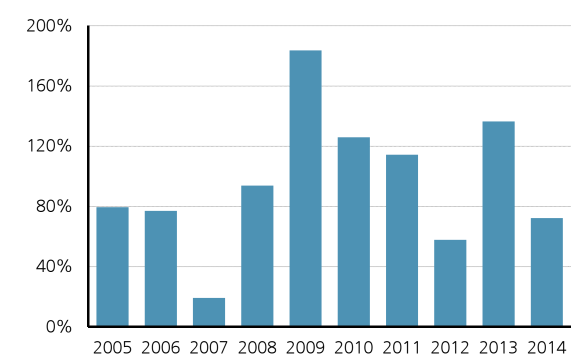


Reserve replacement (inc. Group acquisitions/disposals)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	3 yr	5 yr	1 yr Rank	3 yr Rank	5 yr Rank
BG Group	274%	264%	433%	219%	126%	120%	84%	50%	285%	160%	224%	251%	176%	53%	231%	153%	187%	2	5	3
BP	212%	191%	190%	39%	64%	40%	11%	38%	98%	106%	61%	16%	-62%	77%	24%	12%	25%	19	19	19
Chevron	89%	81%	94%	90%	-27%	206%	50%	11%	106%	146%	34%	191%	116%	94%	99%	103%	106%	11	10	8
Eni	212%	284%	120%	143%	80%	43%	38%	38%	136%	95%	104%	31%	50%	107%	111%	89%	81%	7	14	15
ExxonMobil	120%	80%	85%	105%	-35%	74%	118%	66%	67%	291%	289%	138%	144%	144%	135%	141%	172%	4	6	4
GALP	-	-	-	-	-	-	-	-	-	243%	3087%	528%	260%	634%	619%	529%	826%	1	2	1
Lukoil	203%	724%	578%	259%	93%	157%	105%	116%	-29%	-143%	72%	104%	106%	116%	121%	115%	104%	5	7	9
MOL Group	170%	181%	-25%	131%	68%	60%	34%	77%	81%	293%	59%	137%	1%	-8%	105%	29%	64%	9	18	16
Novatek	-	-	-	-	3841%	358%	145%	106%	230%	1438%	149%	-728%	719%	15%	54%	257%	45%	15	3	18
OMV	52%	109%	109%	254%	2276%	28%	36%	36%	90%	85%	69%	82%	88%	115%	65%	89%	83%	13	13	14
Petrobras	95%	13%	308%	263%	126%	94%	49%	132%	39%	212%	171%	115%	102%	121%	102%	108%	122%	10	8	6
Petro-Canada	-11%	126%	434%	59%	96%	112%	134%	127%	81%	-	-	-	-	-	-	-	-	-	-	-
PetroChina	-	161%	149%	140%	165%	214%	191%	164%	118%	133%	133%	104%	104%	107%	105%	105%	110%	8	9	7
Repsol	165%	279%	-157%	64%	10%	-94%	-74%	45%	44%	62%	102%	131%	98%	125%	119%	-504%	-14%	6	20	20
RD/Shell	62%	116%	77%	48%	21%	69%	173%	-99%	148%	421%	136%	117%	48%	165%	29%	80%	98%	17	15	11
Rosneft	-	-	-	60%	6450%	-50%	231%	209%	77%	174%	102%	363%	143%	1215%	176%	555%	461%	3	1	2
Sasol	-	-	-	-	-	76%	-5%	43%	-6%	652%	16%	71%	34%	154%	20%	69%	62%	20	16	17
Sinopec	-	124%	126%	54%	111%	104%	95%	197%	73%	79%	80%	101%	100%	90%	93%	94%	93%	12	12	13
Statoil	47%	89%	97%	99%	107%	102%	73%	389%	14%	77%	87%	118%	101%	132%	63%	99%	100%	14	11	10
Suncor Energy (incl. Petro-Canada from 2009)	-35%	73%	359%	360%	158%	395%	297%	110%	80%	252%	-25%	164%	136%	442%	37%	208%	149%	16	4	5
TOTAL	139%	151%	143%	143%	79%	41%	61%	-47%	116%	93%	150%	133%	74%	70%	29%	58%	94%	18	17	12
Universe	**95%**	**160%**	**157%**	**122%**	**91%**	**100%**	**85%**	**60%**	**89%**	**178%**	**126%**	**86%**	**100%**	**120%**	**88%**	**103%**	**104%**			
Excluding emerging market	**60%**	**130%**	**116%**	**101%**	**43%**	**80%**	**77%**	**20%**	**100%**	**181%**	**129%**	**119%**	**63%**	**133%**	**78%**	**91%**	**105%**			
Global OilCo constituents	**57%**	**128%**	**110%**	**98%**	**27%**	**79%**	**77%**	**19%**	**94%**	**184%**	**126%**	**114%**	**58%**	**136%**	**72%**	**88%**	**102%**			

Note: Data excludes share of reserves of affiliates

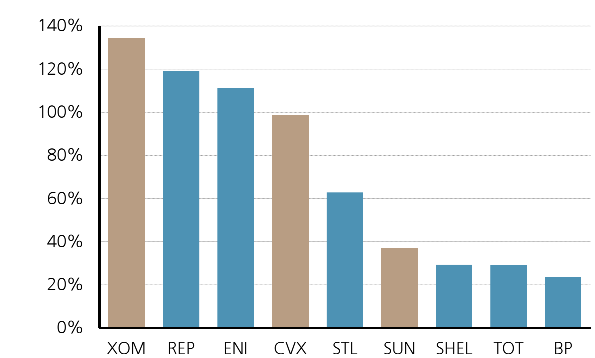
Global OilCo reserve replacement (incl. aqn/disp)



Sector comment

- In general we would expect the Majors to add more reserves through acquisitions
- However, in recent years the increased portfolio activity among the Majors means that A&D has had a more balanced impact

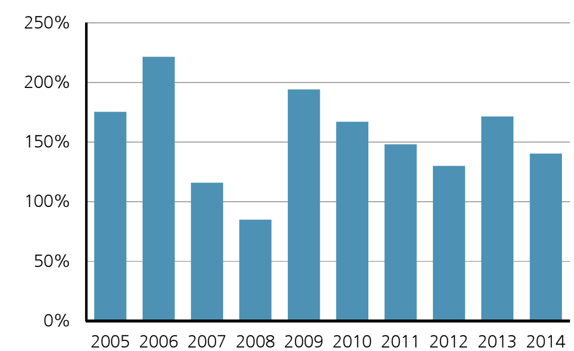
Global OilCo RRR (incl. aqn/disp) by company, 2014



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	3 yr	5 yr	1 yr rank	3 yr rank	5 yr rank
Anadarko	1063%	221%	112%	197%	24%	151%	391%	-173%	25%	112%	150%	148%	108%	182%	121%	137%	141%	10	14	12
Apache	393%	244%	137%	326%	271%	209%	207%	165%	77%	84%	344%	113%	52%	26%	-5%	26%	102%	23	21	17
Cabot	160%	267%	119%	67%	171%	252%	197%	334%	443%	214%	591%	277%	403%	490%	466%	460%	449%	4	4	3
Chesapeake	211%	363%	334%	459%	578%	659%	348%	369%	239%	343%	374%	242%	-118%	126%	19%	10%	108%	20	23	15
CNOOC	54%	165%	255%	186%	172%	185%	196%	144%	60%	163%	116%	163%	186%	337%	111%	211%	186%	12	7	9
Concho	-	-	-	-	-	567%	1643%	363%	754%	779%	819%	367%	304%	266%	428%	340%	397%	5	6	4
ConocoPhillips	893%	120%	596%	101%	87%	124%	301%	47%	-26%	149%	41%	117%	65%	116%	54%	78%	78%	16	16	21
Continental	14%	574%	221%	276%	227%	460%	119%	253%	305%	820%	779%	736%	873%	704%	520%	666%	684%	3	1	1
Devon	134%	487%	94%	311%	97%	116%	213%	161%	71%	231%	162%	154%	83%	100%	15%	67%	102%	21	17	18
EOG	152%	201%	193%	249%	194%	204%	205%	248%	228%	364%	207%	167%	-42%	264%	273%	177%	180%	7	10	10
Hess	130%	239%	-32%	83%	109%	138%	212%	162%	172%	103%	164%	126%	87%	7%	95%	64%	99%	14	18	20
INPEX	-	-	-	-	465%	305%	315%	111%	26%	74%	25%	-13%	1010%	-89%	426%	460%	272%	6	3	6
Lundin	-	-	-	-	-	-	-	-	-	-	-	298%	30%	38%	28%	32%	102%	19	20	19
Marathon	-33%	-19%	260%	-65%	180%	226%	75%	70%	78%	426%	73%	212%	226%	187%	116%	177%	164%	11	9	11
Murphy	161%	239%	-22%	23%	-4%	30%	229%	144%	87%	382%	124%	221%	199%	212%	183%	198%	188%	8	8	8
Noble	281%	285%	116%	69%	272%	644%	144%	163%	79%	43%	445%	245%	72%	322%	98%	165%	227%	13	11	7
Occidental	587%	116%	140%	180%	134%	187%	198%	100%	79%	225%	126%	103%	159%	170%	137%	156%	137%	9	12	13
ONGC	-	-	-	-	-	78%	52%	146%	104%	142%	119%	95%	104%	107%	87%	100%	103%	15	15	16
Pioneer	152%	204%	258%	193%	439%	48%	-79%	242%	91%	-35%	351%	212%	134%	-260%	38%	-32%	66%	18	24	22
PTTEP	-	-	-	-	-	-	-	118%	92%	269%	49%	43%	42%	49%	43%	45%	45%	17	19	23
Range	40%	-27%	219%	284%	784%	365%	449%	503%	398%	399%	827%	402%	627%	595%	597%	604%	604%	1	2	2
Southwestern	173%	154%	133%	313%	363%	397%	376%	473%	477%	590%	416%	291%	-232%	550%	591%	344%	345%	2	5	5
Tullow	-	-	-	-3%	816%	189%	215%	17%	578%	36%	71%	111%	412%	81%	-35%	155%	133%	24	13	14
Woodside	-	-	-	105%	47%	13%	545%	-	-	-	-	75%	30%	3%	9%	14%	25%	22	22	24
Universe	**422%**	**193%**	**240%**	**165%**	**167%**	**175%**	**222%**	**116%**	**85%**	**194%**	**167%**	**148%**	**130%**	**171%**	**140%**	**148%**	**151%**			

Note: Proven + Probable reserves for Tullow, Proven reserves all others. Data excludes share of reserves of affiliates

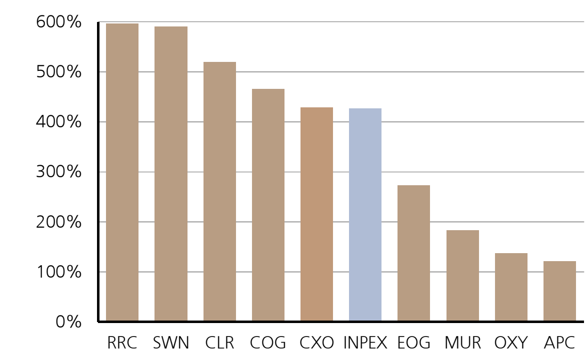
E&P Universe reserve replacement (incl. aqn/disp)



Sector comment

- As we would expect, the reserve replacement of the E&P universe is significantly better – by around ~50%. Indeed, many of the US Independents have RRR of multiples of production

Top 10 E&P RRR (incl. aqn/disp) by company, 2014

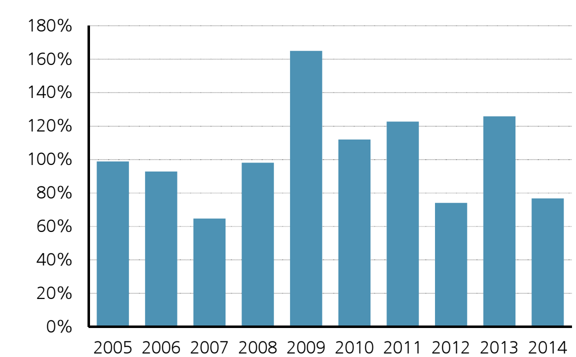


Reserve replacement (inc. Group & affiliates acquisitions/disposals)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	3 yr	5 yr	1 yr Rank	3 yr Rank	5 yr Rank
BG Group	274%	264%	433%	219%	126%	120%	84%	50%	285%	160%	224%	251%	176%	53%	231%	153%	187%	2	5	4
BP	229%	191%	198%	160%	96%	73%	87%	108%	123%	110%	84%	75%	40%	182%	60%	94%	88%	17	14	15
Chevron	149%	112%	111%	108%	18%	175%	69%	11%	146%	112%	24%	171%	112%	82%	90%	98%	96%	14	11	13
Eni	212%	284%	119%	143%	91%	39%	38%	138%	135%	48%	141%	142%	113%	-7%	111%	73%	101%	7	16	11
ExxonMobil	109%	96%	119%	106%	83%	143%	177%	76%	136%	226%	226%	107%	113%	103%	104%	107%	128%	9	8	6
GALP	-	-	-	-	-	-	-	-	-	847%	3087%	528%	260%	443%	704%	504%	808%	1	2	1
Lukoil	109%	709%	544%	180%	101%	137%	104%	101%	-27%	-122%	70%	102%	103%	113%	121%	112%	102%	4	6	10
MOL Group	n/a	181%	78%	130%	68%	60%	34%	77%	368%	292%	69%	128%	6%	3%	103%	34%	66%	10	19	18
Novatek	-	-	-	-	3841%	-160%	145%	106%	230%	1438%	595%	85%	841%	134%	114%	347%	331%	6	3	3
OMV	52%	109%	109%	254%	2276%	64%	36%	38%	91%	85%	70%	81%	86%	113%	64%	87%	82%	15	15	17
Petrobras	128%	10%	305%	263%	126%	94%	49%	141%	37%	210%	170%	114%	101%	128%	101%	110%	123%	11	7	8
Petro-Canada	-11%	126%	434%	59%	96%	112%	134%	127%	81%	-	-	-	-	-	-	-	-	-	-	-
PetroChina	-	161%	149%	140%	166%	214%	191%	158%	118%	133%	133%	104%	104%	107%	105%	105%	110%	8	9	9
Repsol	208%	279%	-157%	64%	10%	-94%	-74%	45%	44%	62%	102%	130%	-626%	272%	120%	-69%	45%	5	20	20
RD/Shell	50%	38%	97%	47%	19%	67%	128%	17%	108%	372%	110%	99%	44%	131%	26%	67%	82%	19	18	16
Rosneft	-	-	-	2616%	6450%	-50%	231%	314%	99%	180%	106%	356%	242%	1389%	174%	662%	537%	3	1	2
Sasol	-	-	-	-	9376%	76%	-5%	43%	-6%	652%	16%	71%	34%	154%	20%	69%	62%	20	17	19
Sinopec	-	124%	126%	54%	111%	104%	95%	197%	112%	79%	80%	101%	100%	90%	93%	94%	93%	13	13	14
Statoil	47%	89%	98%	99%	106%	102%	73%	389%	34%	73%	87%	117%	99%	128%	62%	97%	98%	16	12	12
Suncor Energy (incl. Petro-Canada from 2009)	-35%	73%	359%	362%	158%	395%	297%	110%	80%	252%	-25%	164%	136%	442%	37%	208%	149%	18	4	5
TOTAL	141%	129%	124%	122%	73%	94%	103%	25%	101%	102%	124%	184%	93%	122%	99%	105%	125%	12	10	7
Universe	**94%**	**160%**	**163%**	**133%**	**113%**	**109%**	**95%**	**86%**	**92%**	**167%**	**127%**	**119%**	**110%**	**120%**	**91%**	**100%**	**107%**			
Excluding emerging market	**65%**	**132%**	**127%**	**119%**	**78%**	**98%**	**92%**	**64%**	**103%**	**164%**	**115%**	**126%**	**77%**	**123%**	**81%**	**91%**	**94%**			
Global OilCo constituents	**62%**	**130%**	**122%**	**116%**	**65%**	**99%**	**93%**	**65%**	**98%**	**165%**	**112%**	**123%**	**74%**	**126%**	**77%**	**92%**	**103%**			

Note: Data includes share of reserves of affiliates

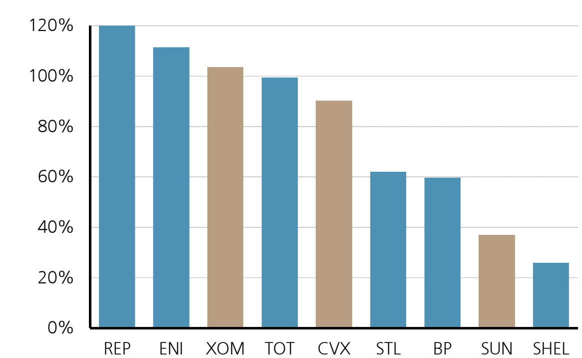
Global OilCo reserve replacement (incl. aqn/disp/af)



Sector comment

- Increasingly the International Majors have material portions of their upstream businesses in incorporated joint ventures and affiliates

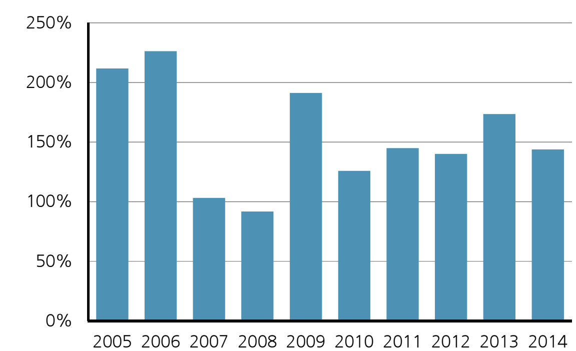
Global OilCo RRR (incl. aqn/disp/af) by company, 2014



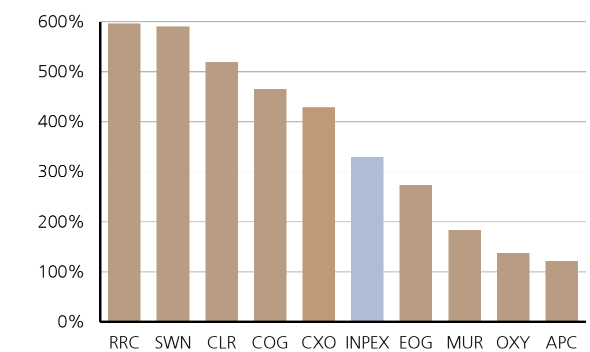
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	3 yr	5 yr	1 yr rank	3 yr rank	5 yr rank
Anadarko	1063%	221%	112%	197%	24%	151%	391%	-173%	25%	112%	150%	148%	108%	182%	121%	137%	141%	10	14	12
Apache	393%	244%	137%	326%	271%	209%	207%	165%	77%	84%	344%	113%	52%	26%	-5%	26%	102%	23	21	17
Cabot	160%	267%	119%	67%	171%	252%	197%	334%	443%	214%	591%	277%	403%	490%	466%	460%	449%	4	3	3
Chesapeake	211%	363%	334%	459%	578%	659%	348%	369%	239%	343%	374%	242%	-118%	126%	19%	10%	108%	20	23	15
CNOOC	54%	165%	255%	186%	172%	185%	196%	144%	60%	162%	201%	154%	188%	328%	112%	209%	197%	12	7	8
Concho	-	-	-	-	-	567%	1643%	363%	754%	779%	819%	367%	304%	266%	428%	340%	397%	5	6	4
ConocoPhillips	1127%	135%	750%	106%	206%	230%	305%	19%	29%	152%	-160%	112%	142%	147%	97%	129%	55%	14	15	22
Continental	14%	574%	221%	276%	227%	460%	119%	253%	305%	820%	779%	736%	873%	704%	520%	666%	684%	3	1	1
Devon	134%	487%	94%	311%	97%	116%	213%	161%	71%	231%	162%	154%	83%	100%	15%	67%	102%	21	17	18
EOG	152%	201%	193%	249%	194%	204%	205%	248%	228%	364%	207%	167%	-42%	264%	273%	177%	180%	7	10	10
Hess	133%	295%	-42%	-14%	109%	138%	212%	162%	172%	103%	164%	126%	87%	7%	95%	64%	99%	15	18	20
INPEX	-	-	-	-	449%	572%	287%	97%	19%	67%	17%	-10%	800%	-66%	330%	362%	218%	6	4	7
Lundin	-	-	-	-	-	-	-	-	-	-	-	298%	30%	38%	28%	32%	102%	19	20	19
Marathon	-83%	99%	255%	-197%	180%	226%	75%	70%	78%	426%	73%	212%	226%	187%	116%	177%	164%	11	9	11
Murphy	161%	239%	-22%	23%	-4%	30%	229%	144%	87%	382%	124%	221%	199%	212%	183%	198%	188%	8	8	9
Noble	281%	285%	116%	69%	272%	644%	144%	163%	79%	43%	445%	245%	72%	322%	98%	165%	227%	13	11	6
Occidental	544%	115%	137%	179%	130%	184%	188%	86%	79%	225%	126%	103%	159%	170%	137%	156%	137%	9	12	13
ONGC	-	-	-	-	-	78%	52%	146%	104%	142%	119%	95%	104%	107%	87%	100%	103%	16	16	16
Pioneer	152%	204%	258%	193%	439%	48%	-79%	242%	91%	-35%	351%	212%	134%	-260%	38%	-32%	66%	18	24	21
PTTEP	-	-	-	-	-	-	-	118%	92%	269%	49%	43%	42%	49%	43%	45%	45%	17	19	23
Range	40%	-27%	219%	284%	784%	365%	449%	503%	398%	399%	827%	402%	627%	595%	597%	604%	604%	1	2	2
Southwestern	173%	154%	133%	313%	363%	397%	376%	473%	477%	590%	416%	291%	-232%	550%	591%	344%	345%	2	5	5
Tullow	-	-	-	-3%	816%	189%	215%	17%	578%	36%	71%	111%	412%	81%	-35%	155%	133%	24	13	14
Woodside	-	-	-	105%	47%	13%	545%	-	-	-	-	75%	30%	3%	9%	14%	25%	22	22	24
Universe	**456%**	**211%**	**275%**	**150%**	**196%**	**212%**	**226%**	**103%**	**92%**	**191%**	**126%**	**145%**	**140%**	**174%**	**144%**	**153%**	**146%**			

Note: Proven + Probable reserves for Tullow, Proven reserves all others. Data excludes share of reserves of affiliates

E&P Universe reserve replacement (incl. aqn/disp/af)



Top 10 E&P RRR (incl. aqn/disp/af) by company, 2014

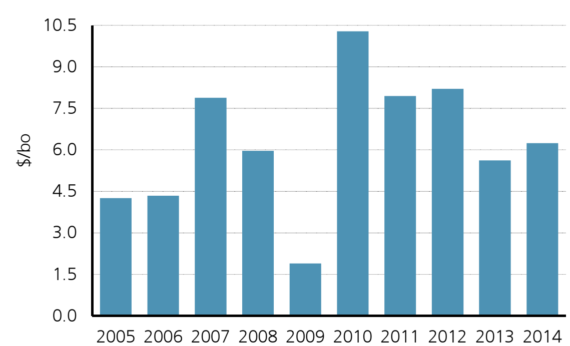


Finding costs

$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Avg. 3 yr	Avg. 5 yr	1 yr Rank	3 yr Rank	5 yr Rank
BG Group	0.75	0.61	1.13	0.88	7.06	2.79	5.55	9.05	10.88	10.56	4.70	2.82	2.86	6.23	2.43	3.42	3.57	4	5	5
BP	2.16	0.61	0.57	0.64	1.40	1.95	5.81	5.82	4.87	2.88	7.14	26.27	NM	7.08	16.27	15.29	13.78	18	17	17
Chevron	1.71	2.17	1.48	1.32	22.16	26.28	4.76	23.24	3.43	1.52	9.34	6.82	3.80	8.01	4.41	5.19	6.00	8	9	9
Eni	1.63	3.65	1.49	1.31	1.12	6.24	4.07	70.12	6.80	3.48	1.95	14.86	4.56	3.67	2.89	3.65	3.98	6	7	6
ExxonMobil	0.90	1.50	1.09	0.84	NM	1.55	2.18	1.44	3.30	1.12	26.94	3.37	3.18	5.18	2.52	3.61	6.80	5	6	10
GALP	-	-	-	-	-	-	-	-	-	-	0.85	7.98	21.83	8.47	5.94	9.03	5.39	11	13	8
Lukoil	-	-	0.05	0.57	0.95	2.33	2.11	1.27	NM	NM	0.84	1.38	2.04	3.65	1.49	2.29	1.91	3	4	4
MOL Group	-	0.99	NM	NM	NM	NM	NM	3.67	NM	6.50	5.70	2.56	595.39	32.26	9.85	17.98	8.95	15	18	14
Novatek	-	-	-	-	0.03	0.03	0.10	0.38	0.15	0.03	0.14	0.45	0.34	NM	0.17	0.50	-0.54	1	1	1
OMV	3.12	2.37	4.15	7.14	2.88	4.56	5.51	10.00	5.40	3.06	6.92	16.26	12.84	46.49	15.68	21.02	16.36	16	19	19
Petrobras	1.09	4.40	0.40	0.96	1.63	3.47	7.68	2.88	14.49	2.75	33.91	6.98	7.38	9.52	5.56	7.51	14.54	10	11	18
Petro-Canada	1.74	2.04	1.28	2.30	6.32	1.43	0.92	2.28	11.35	-	-	-	-	-	-	-	-	-	-	-
PetroChina	-	0.85	0.95	1.41	1.39	1.36	1.86	2.69	3.84	2.99	3.61	4.31	4.61	4.64	3.81	4.34	4.17	7	8	7
Repsol	0.76	0.94	-0.54	NM	9.76	NM	NM	7.64	9.26	6.48	3.51	4.63	15.56	23.09	29.03	22.01	8.18	20	20	13
RD/Shell	1.24	1.41	8.48	2.33	3.12	3.16	3.66	17.65	8.90	1.23	9.25	8.66	29.00	7.87	16.17	13.84	11.45	17	15	16
Rosneft	-	-	-	NM	2.50	NM	1.77	0.72	0.86	0.32	0.69	0.21	0.48	NM	0.37	1.35	0.88	2	3	2
Sasol	-	-	-	-	-	3.94	NM	24.08	NM	1.70	21.73	282.74	18.98	7.97	23.47	14.37	34.23	19	16	20
Sinopec	-	1.85	1.85	5.95	2.89	3.36	4.57	3.22	6.83	7.12	7.19	7.74	8.35	7.72	6.48	7.52	7.51	12	12	11
Statoil	2.18	0.74	0.73	1.01	1.75	6.33	12.33	10.09	25.24	5.81	8.57	14.84	6.34	4.37	6.79	5.66	7.73	13	10	12
Suncor Energy (incl. Petro-Canada from 2009)	2.41	2.18	1.05	0.31	1.31	0.41	0.61	2.12	5.31	0.61	4.43	1.42	1.59	0.47	5.25	0.96	1.23	9	2	3
TOTAL	0.67	0.79	0.72	0.65	1.23	2.72	3.73	18.52	2.21	4.06	6.30	8.96	9.64	14.63	7.84	10.51	9.07	14	14	15
Universe	**0.89**	**1.37**	**1.07**	**1.16**	**2.44**	**3.10**	**3.95**	**4.85**	**6.41**	**2.49**	**11.25**	**8.12**	**6.83**	**6.40**	**5.17**	**6.14**	**7.59**			
Excluding emerging market	**0.93**	**1.47**	**1.53**	**1.07**	**3.33**	**4.19**	**4.40**	**7.95**	**6.32**	**2.11**	**9.77**	**7.63**	**7.86**	**5.81**	**6.01**	**6.47**	**7.37**			
Global OilCo constituents	**1.39**	**1.50**	**1.55**	**1.06**	**3.12**	**4.26**	**4.34**	**7.88**	**5.96**	**1.90**	**10.30**	**7.95**	**8.22**	**5.63**	**6.25**	**6.55**	**7.57**			

Note: Finding costs = (total exploration expense + unproved acquisitions) / (extensions + discoveries + revisions + improved recovery + reclassifications). Data excludes share of reserves of affiliates

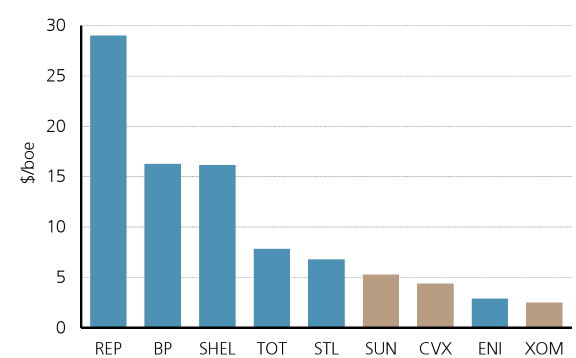
Global OilCo finding costs



Sector comment

- Finding costs of ~$6-7/boe, which is where the sector is currently averaging, don't look economic with oil prices at $50-$60/boe
- The increase of 6-7x over the past decade likely speaks to lower discovery rates and also higher industry costs

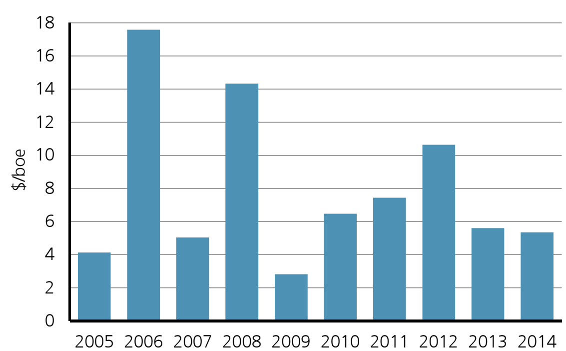
Global OilCo finding costs by company, 2014



$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Avg. 3 yr	Avg. 5 yr	1 yr rank	3 yr rank	5 yr rank
Anadarko	11.15	4.68	7.27	2.48	2.01	3.48	1020.14	4.08	7.79	6.21	5.03	5.40	6.30	4.67	3.97	4.85	4.98	6	8	9
Apache	2.25	1.54	1.63	1.96	1.48	1.62	5.73	4.74	9.45	8.37	20.54	8.66	68.46	4.88	7.28	11.54	12.50	13	15	16
Cabot	2.92	9.54	3.57	5.23	4.42	3.89	3.82	1.97	5.88	4.88	1.50	1.02	0.80	0.32	0.28	0.40	0.58	1	1	1
Chesapeake	0.95	6.11	2.28	4.66	4.71	9.74	14.98	8.52	21.63	6.56	8.89	7.45	NM	3.43	4.15	10.46	8.87	7	14	12
CNOOC	0.83	0.76	1.35	0.97	1.13	2.06	25.77	3.32	7.65	2.97	9.80	17.45	6.36	31.30	8.25	14.88	14.44	14	17	17
Concho	-	-	-	-	-	3.52	19.82	6.82	17.27	3.21	11.51	11.20	17.66	12.70	11.26	13.00	12.50	17	16	15
ConocoPhillips	3.79	1.76	17.68	1.13	2.00	2.68	50.07	4.33	NM	1.77	3.00	4.52	8.00	3.87	7.24	5.76	4.93	12	9	8
Continental	10.46	0.84	1.89	1.35	3.74	0.69	9.53	7.53	12.63	1.52	5.12	5.59	6.74	3.54	3.83	4.47	4.69	5	6	6
Devon	1.72	26.05	9.16	10.50	3.71	2.92	6.70	3.03	28.24	1.23	4.03	4.05	8.74	3.03	9.71	6.56	5.13	15	13	10
EOG	2.23	2.64	1.88	2.48	3.25	2.86	3.73	3.34	3.91	3.10	2.85	2.02	66.40	1.56	1.24	2.20	2.29	3	3	3
Hess	3.01	8.85	NM	4.71	2.55	6.73	7.60	4.57	7.49	8.02	22.51	12.82	6.33	7.44	4.42	5.96	9.86	9	10	14
INPEX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lundin	-	-	-	-	-	-	-	-	-	-	-	13.54	NM	127.12	82.76	138.47	-	20	21	-
Marathon	NM	14.59	3.82	4.55	1.39	6.98	7.23	15.24	13.53	0.97	11.41	22.58	7.40	4.55	6.49	6.11	9.28	10	11	13
Murphy	17.01	3.50	143.72	7.90	9.11	23.35	4.77	13.41	9.29	1.86	8.95	5.83	4.57	2.91	2.67	3.24	4.38	4	5	5
Noble	1.58	2.89	4.75	3.84	1.61	20.81	5.71	4.73	15.12	13.06	1.98	11.99	6.50	3.53	6.65	4.84	4.74	11	7	7
Occidental	0.73	1.20	0.85	0.41	0.74	2.60	11.67	2.99	NM	0.91	14.44	24.84	3.64	1.55	4.17	3.08	6.08	8	4	11
ONGC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pioneer	2.47	5.64	2.01	3.11	23.53	NM	15.48	7.20	17.74	NM	2.84	5.68	14.16	8.91	13.53	56.17	15.59	18	20	18
PTTEP	-	-	-	-	-	-	-	3.79	4.84	0.93	4.06	21.16	54.22	9.96	16.85	25.60	20.34	19	18	19
Range	1.98	NM	1.71	2.23	2.10	2.06	5.14	2.00	3.79	2.18	1.09	1.85	1.82	1.08	1.14	1.31	1.37	2	2	2
Southwestern	3.04	2.93	2.23	1.80	1.45	2.47	6.24	6.68	2.02	0.57	0.89	1.31	NM	0.60	11.18	6.34	4.19	16	12	4
Tullow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Woodside	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44.09	-	-	19	-
Universe	**4.06**	**4.33**	**5.53**	**2.62**	**2.42**	**4.14**	**17.58**	**5.04**	**14.33**	**2.82**	**6.47**	**7.44**	**10.64**	**5.60**	**5.36**	**6.59**	**6.73**			

Note: Finding costs = (total exploration expense + unproved acquisitions) / (extensions + discoveries + revisions + improved recovery + reclassifications). Data excludes share of reserves of affiliates

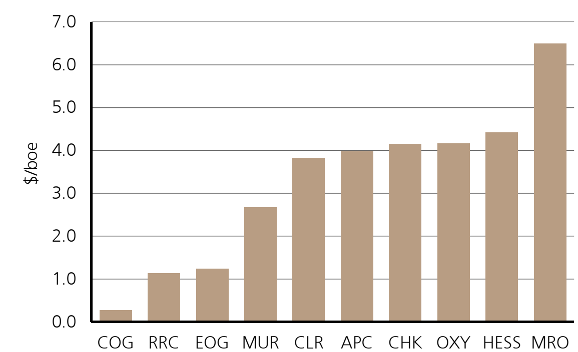
E&P Universe finding costs



Sector comment

- Interestingly E&P finding costs are not materially different to the integrated Majors, partly because we believe they are adding significantly more to 2P reserves, we think, but also because they are not immune to the trend of growing industry costs

Bottom 10 E&P finding costs by company, 2014

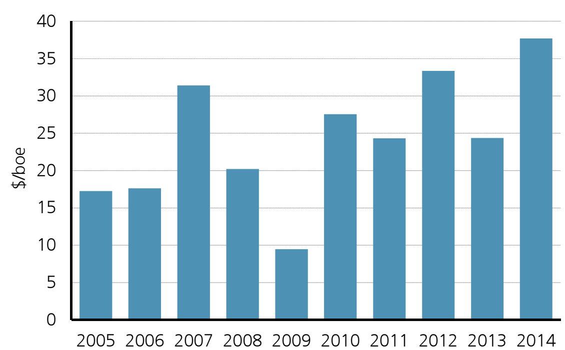


Finding and development costs

$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Avg. 3 yr	Avg. 5 yr	1 yr Rank	3 yr Rank	5 yr Rank
BG Group	3.24	3.21	3.24	3.11	14.70	8.45	12.77	28.90	17.26	20.33	12.23	13.23	18.79	37.09	15.73	21.50	17.30	4	6	7
BP	4.71	3.78	4.16	6.49	10.53	13.23	33.38	30.37	15.72	12.22	18.32	56.32	NM	25.21	88.75	59.21	42.29	19	18	18
Chevron	5.18	7.12	5.91	5.41	93.59	33.52	25.34	176.44	21.07	10.72	58.25	12.69	22.15	39.50	38.85	32.24	30.71	13	12	14
Eni	4.91	8.27	7.06	8.94	10.23	39.99	18.56	159.30	19.87	22.24	19.09	77.50	28.61	21.74	26.05	25.30	27.29	10	8	11
ExxonMobil	3.39	6.68	7.19	6.93	NM	9.96	14.57	9.21	18.27	6.06	49.53	17.47	21.13	23.57	19.46	21.35	24.33	6	5	10
GALP	-	-	-	-	-	-	-	-	-	-	4.08	18.10	51.18	21.86	23.60	26.62	16.07	8	10	5
Lukoil	NM	NM	0.64	2.11	5.96	6.26	9.76	9.12	NM	NM	9.34	8.60	12.19	18.48	11.83	13.87	12.18	3	4	3
MOL Group	-	1.40	NM	NM	NM	NM	NM	7.41	NM	15.42	15.51	6.31	1122.48	62.85	18.43	34.12	18.50	5	13	8
Novatek	-	-	-	-	1.15	0.45	0.60	4.20	2.15	0.67	1.60	1.56	5.41	NM	7.81	12.37	-5.72	2	3	1
OMV	8.21	6.65	10.07	14.74	7.07	16.10	19.39	46.74	31.03	18.40	23.75	37.17	39.02	124.86	61.09	66.59	49.08	16	19	19
Petrobras	5.30	22.39	1.84	4.36	6.19	10.87	26.10	11.63	59.24	9.73	44.40	21.80	27.92	27.11	23.94	26.25	30.34	9	9	13
Petro-Canada	5.87	7.45	5.14	11.95	29.34	10.58	6.59	10.09	62.29	-	-	-	-	-	-	-	-	-	-	-
PetroChina	-	3.33	4.12	5.09	4.74	5.26	6.71	9.89	16.58	12.12	15.02	18.81	24.18	22.14	20.56	22.23	20.03	7	7	9
Repsol	2.69	4.95	NM	NM	40.75	NM	NM	22.77	26.07	15.06	10.52	13.20	30.07	34.61	41.09	34.83	17.16	14	14	6
RD/Shell	4.92	5.00	21.75	13.08	22.61	17.14	11.61	72.68	19.01	5.35	20.22	18.97	67.87	19.18	69.75	42.51	31.28	18	16	15
Rosneft	-	-	-	-	4.22	NM	3.71	8.18	11.66	4.50	7.89	2.90	5.03	NM	3.68	7.27	5.77	1	1	2
Sasol	-	-	-	-	-	6.53	NM	38.96	NM	3.06	58.77	430.06	168.73	43.03	95.55	89.49	111.21	20	20	20
Sinopec	-	7.85	7.83	20.52	10.13	11.19	17.74	13.39	36.06	31.68	29.05	26.92	34.60	40.72	35.18	36.77	33.46	12	15	16
Statoil	11.78	4.60	5.29	7.96	19.47	15.77	33.36	23.51	60.37	23.95	25.43	35.51	27.21	22.28	33.15	26.79	28.13	11	11	12
Suncor Energy (incl. Petro-Canada from 2009)	7.72	9.02	5.17	1.77	6.65	2.62	3.20	12.31	41.64	5.91	47.95	15.56	21.07	5.28	62.89	11.60	14.30	17	2	4
TOTAL	4.36	4.36	4.56	4.50	9.05	24.56	18.50	102.97	14.01	22.94	21.09	35.17	40.09	73.43	57.34	55.03	41.84	15	17	17
Universe	**3.11**	**5.55**	**4.80**	**6.23**	**12.61**	**11.81**	**14.84**	**19.99**	**23.31**	**11.45**	**25.75**	**27.27**	**29.72**	**26.73**	**30.06**	**28.69**	**27.81**			
Excluding emerging market	**3.11**	**5.85**	**6.82**	**6.76**	**20.98**	**16.81**	**17.47**	**31.53**	**20.17**	**9.80**	**26.22**	**23.59**	**32.36**	**25.24**	**35.92**	**30.35**	**28.05**			
Global OilCo constituents	**4.62**	**5.96**	**7.08**	**6.91**	**21.59**	**17.26**	**17.62**	**31.40**	**20.22**	**9.47**	**27.60**	**24.34**	**33.42**	**24.40**	**37.72**	**30.63**	**28.66**			

Note: Finding & Development costs = (total costs incurred in exploration and development) / (extensions + discoveries + revisions + improved recovery + reclassifications). Data excludes share of reserves of affiliates

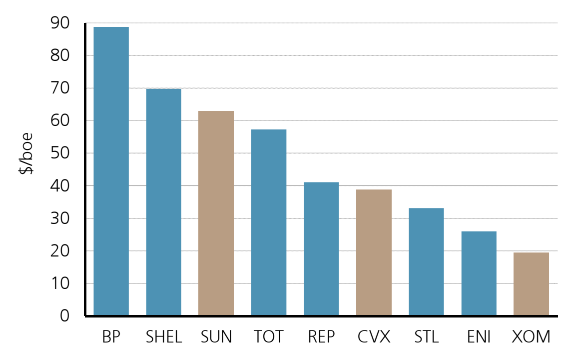
Global OilCo finding and development costs



Sector comment

- 1-year F&D costs are often regarded as an unrepresentative snapshot but an average of >$30/boe does not show the sector in good health
- That being said, 5-year averages of between $25 and $30/boe emphasise the deterioration in the economics of the industry
- As an aside, we note that while the industry as a whole claimed not to share any of the issues that Shell was forced to correct for in 2004, that year does seem to represent a major shift in F&D costs

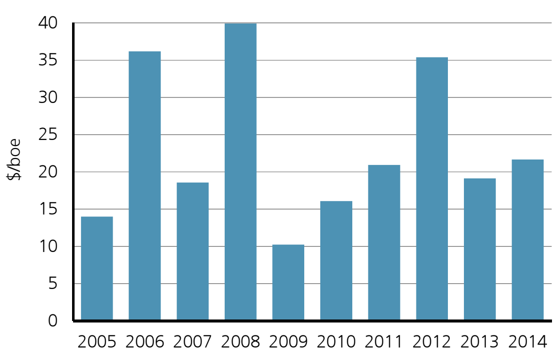
Global OilCo F&D costs by company, 2014



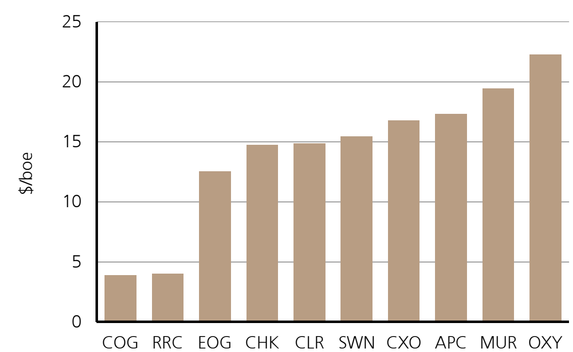
$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Avg. 3 yr	Avg. 5 yr	1 yr rank	3 yr rank	5 yr rank
Anadarko	15.24	9.69	14.31	7.45	9.08	11.46	NM	15.26	26.65	18.08	14.17	14.39	17.42	14.56	17.34	16.36	15.62	8	5	5
Apache	2.25	1.54	1.63	6.72	7.69	11.30	22.51	17.59	36.24	22.65	36.48	28.40	170.74	25.14	35.57	42.35	38.37	14	17	17
Cabot	6.37	17.19	7.03	9.37	10.23	10.37	12.53	12.51	20.34	13.54	6.31	7.28	5.22	3.30	3.89	3.92	4.53	1	1	1
Chesapeake	6.05	28.73	7.08	12.12	11.04	20.69	30.20	19.29	33.88	11.53	14.28	13.31	NM	13.30	14.75	29.53	18.71	4	12	8
CNOOC	6.55	3.78	6.73	6.83	8.32	14.76	42.92	17.74	39.89	18.18	22.29	37.59	19.60	54.30	40.99	37.11	34.87	17	15	15
Concho	-	-	-	-	-	9.75	29.45	10.39	24.99	7.30	19.90	20.23	28.36	21.11	16.79	20.41	20.31	7	9	9
ConocoPhillips	7.11	5.97	31.42	5.68	8.79	15.24	187.39	24.84	NM	8.78	14.27	16.99	39.27	21.32	37.97	30.10	23.93	16	13	13
Continental	44.23	2.28	9.00	6.33	8.39	4.13	30.92	19.24	26.34	3.85	9.72	12.76	15.05	10.85	14.86	13.39	12.93	5	4	4
Devon	5.80	38.11	18.78	20.94	11.92	9.31	18.01	16.83	83.89	8.30	14.02	18.91	37.83	22.07	45.11	32.94	23.42	18	14	11
EOG	7.50	8.92	6.88	8.56	10.54	10.27	15.33	13.77	16.37	8.36	15.27	20.10	NM	13.54	12.53	19.01	18.47	3	6	7
Hess	8.57	18.22	NM	19.85	11.11	26.39	20.87	16.62	19.29	21.69	43.82	41.21	41.34	45.77	30.57	38.78	40.05	13	16	18
INPEX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lundin	-	-	-	-	-	-	-	-	-	-	-	20.58	NM	378.83	233.83	364.16	-	20	20	-
Marathon	NM	26.01	6.81	12.07	4.66	17.12	15.96	34.39	31.13	5.18	34.13	32.08	18.46	16.35	23.43	19.12	22.61	11	7	10
Murphy	32.86	7.23	NM	24.20	17.79	52.06	14.12	38.69	38.69	7.98	26.02	19.38	32.31	24.58	19.44	24.53	23.67	9	11	12
Noble	4.40	7.04	10.74	13.27	5.29	31.38	19.71	14.68	38.47	44.45	7.11	31.27	31.27	13.08	36.46	22.06	18.20	15	10	6
Occidental	3.84	6.11	5.54	4.96	7.15	10.63	37.78	23.09	NM	9.05	33.12	102.29	22.73	16.35	22.29	20.32	27.20	10	8	14
ONGC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pioneer	4.64	11.54	6.11	6.24	36.16	NM	38.19	19.96	51.11	NM	7.40	17.78	38.21	18.67	23.77	117.46	35.25	12	19	16
PTTEP	-	-	-	-	-	-	-	13.15	17.03	8.95	29.58	89.97	103.94	61.77	46.58	67.55	64.34	19	18	19
Range	14.99	NM	5.58	8.85	8.76	8.56	13.57	10.85	12.98	6.04	4.11	5.63	5.49	4.00	4.00	4.43	4.59	2	2	2
Southwestern	5.52	9.53	6.13	7.85	8.33	10.22	16.11	15.25	9.19	5.15	6.14	7.88	NM	3.36	15.48	12.44	10.19	6	3	3
Tullow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Woodside	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Universe	**8.08**	**9.45**	**12.47**	**8.50**	**9.05**	**14.00**	**36.19**	**18.57**	**39.92**	**10.24**	**16.08**	**20.92**	**35.40**	**19.13**	**21.66**	**23.57**	**21.58**	-		

Note: Finding & Development costs = (total costs incurred in exploration and development) / (extensions + discoveries + revisions + improved recovery + reclassifications). Data excludes share of reserves of affiliates

E&P Universe finding & development costs



Bottom 10 E&P F&D costs by company, 2014

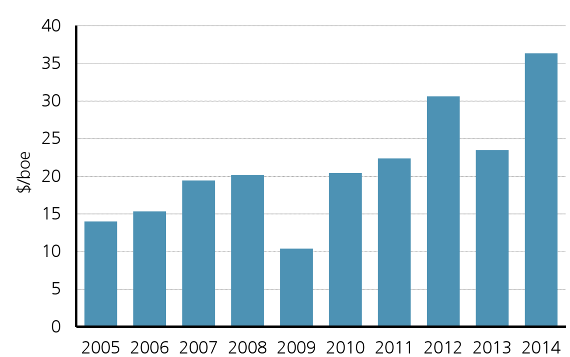


Total replacement costs

$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Avg. 3 yr	Avg. 5 yr	1 yr Rank	3 yr Rank	5 yr Rank
BG Group	3.24	3.21	3.37	3.12	12.05	8.45	12.77	28.93	14.15	17.31	12.53	13.10	18.79	37.09	15.73	21.50	17.28	4	6	7
BP	5.74	3.73	3.72	6.22	10.52	12.97	33.38	27.78	16.64	12.26	18.23	51.58	NM	25.16	67.50	52.19	38.88	18	20	18
Chevron	4.95	7.20	5.93	5.43	92.30	14.24	24.70	131.44	20.31	10.74	60.19	16.14	23.56	41.80	38.44	33.43	29.00	13	13	13
Eni	4.92	5.84	6.84	7.63	10.23	24.89	18.98	65.06	19.99	22.37	19.09	76.82	28.72	21.74	25.86	25.25	27.23	10	8	11
ExxonMobil	3.39	6.68	7.21	6.92	NM	9.09	7.97	9.23	18.34	6.27	20.24	17.03	17.67	21.19	18.75	19.15	19.15	5	5	9
GALP	-	-	-	-	-	-	-	-	-	-	4.08	18.10	51.18	21.86	23.60	26.62	16.07	9	10	5
Lukoil	1.47	0.66	0.46	1.63	4.15	5.47	7.75	7.88	NM	NM	8.53	8.57	11.69	16.98	11.61	16.00	11.82	3	4	3
MOL Group	-	1.42	NM	5.72	NM	NM	NM	11.31	NM	1.75	15.51	6.31	1122.47	62.85	18.91	31.46	18.70	6	12	8
Novatek	-	-	-	-	0.73	0.30	0.70	3.94	2.15	0.54	2.11	1.56	0.40	24.86	7.64	1.41	4.11	2	1	1
OMV	8.21	6.65	9.45	5.71	2.07	16.13	19.38	46.74	37.59	19.76	24.98	39.73	25.10	52.58	67.85	46.88	41.76	19	18	19
Petrobras	5.30	22.39	1.84	3.61	6.17	10.87	24.98	11.68	54.07	9.19	44.36	21.85	27.92	27.10	23.34	26.02	30.18	8	9	15
Petro-Canada	5.88	7.38	1.57	11.90	15.10	11.91	11.57	12.89	37.22	-	-	-	-	-	-	-	-	-	-	-
PetroChina	-	3.33	4.12	5.09	4.74	5.26	6.71	9.89	16.58	12.12	16.37	18.87	26.95	24.03	22.69	24.48	21.68	7	7	10
Repsol	3.47	1.58	NM	10.64	29.45	NM	NM	22.98	27.04	14.79	10.38	13.20	30.07	35.18	41.81	35.23	16.92	14	14	6
RD/Shell	4.95	4.73	12.99	13.50	23.01	16.46	11.16	72.64	18.48	5.53	19.29	19.00	56.82	24.35	63.63	39.80	29.92	17	16	14
Rosneft	-	-	-	17.16	1.39	NM	9.07	5.97	12.08	4.50	7.89	2.90	5.05	4.50	3.92	4.48	4.40	1	2	2
Sasol	-	-	-	-	-	6.53	NM	38.96	NM	3.06	58.77	78.73	165.95	14.33	95.55	44.36	51.86	20	17	20
Sinopec	-	7.85	7.83	20.52	10.13	11.19	17.74	13.39	36.06	31.68	29.05	26.92	34.60	40.72	35.18	36.77	33.46	12	15	17
Statoil	11.78	4.60	5.16	7.96	12.71	15.06	33.36	5.08	53.60	23.95	25.04	30.24	27.13	22.35	33.28	26.85	27.30	11	11	12
Suncor Energy (incl. Petro-Canada from 2009)	7.80	8.80	1.55	1.83	7.14	2.92	4.76	14.42	32.88	13.77	47.95	15.56	21.07	5.28	62.89	11.60	14.30	16	3	4
TOTAL	4.35	4.30	4.21	4.43	8.79	20.48	18.22	103.72	14.35	21.62	13.21	23.11	38.39	56.64	57.43	49.92	31.35	15	19	16
Universe	**3.39**	**4.03**	**4.35**	**5.60**	**9.32**	**10.81**	**14.30**	**16.30**	**22.19**	**10.34**	**21.74**	**25.54**	**23.05**	**31.30**	**29.85**	**27.96**	**26.07**			
Excluding emerging market	**3.67**	**5.13**	**6.07**	**6.37**	**14.72**	**13.83**	**15.29**	**19.90**	**19.90**	**10.66**	**20.03**	**21.91**	**29.76**	**24.35**	**34.90**	**28.91**	**25.18**			
Global OilCo constituents	**5.01**	**5.19**	**6.25**	**6.52**	**19.57**	**14.00**	**15.33**	**19.46**	**20.18**	**10.40**	**20.45**	**22.40**	**30.68**	**23.52**	**36.39**	**29.10**	**25.49**			

Note: Total replacement costs = (total costs incurred in exploration, development and acquisitions) / (total reserve additions), and is therefore skewed by disposals. Data excludes share of reserves of affiliates

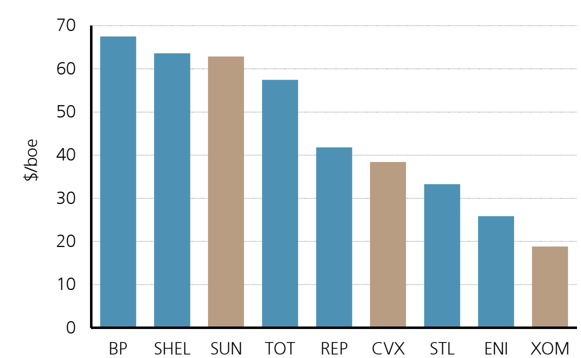
Global OilCo total replacement costs



Sector comment

- Given timing difference between investment and production, total replacement costs of over $20/boe, which is where the industry is trending, is just not likely to generate attractive economic returns on investment

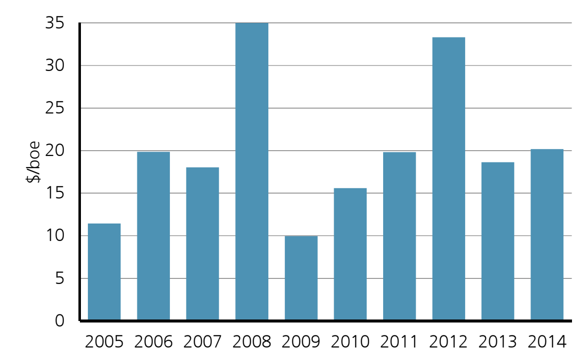
Global OilCo total costs by company, 2014



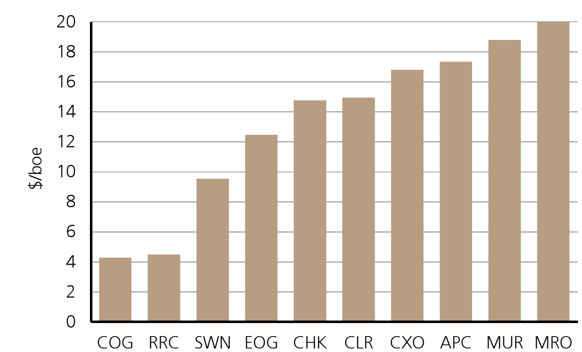
$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Avg. 3 yr	Avg. 5 yr	1 yr rank	3 yr rank	5 yr rank
Anadarko	7.20	8.54	10.53	6.94	9.01	11.42	30.50	15.25	26.79	16.96	14.19	14.39	17.22	14.19	17.35	16.12	15.48	8	5	5
Apache	3.70	2.75	2.80	5.90	7.51	11.19	16.50	16.79	35.25	21.30	20.81	29.70	94.00	25.20	33.64	39.36	30.43	15	17	16
Cabot	6.35	12.35	5.87	9.32	10.01	11.45	12.58	12.42	20.53	13.55	6.31	7.28	5.22	3.30	4.28	4.10	4.66	1	1	1
Chesapeake	5.35	8.91	7.00	9.63	9.47	13.92	23.68	18.15	32.52	11.52	14.31	13.29	NM	13.29	14.77	29.40	18.73	5	13	8
CNOOC	6.55	3.78	4.68	5.45	8.96	9.94	24.42	17.74	39.89	18.15	22.38	22.43	19.60	29.84	40.99	29.49	27.60	19	14	15
Concho	-	-	-	-	-	10.38	19.21	10.30	22.06	7.98	17.93	19.27	22.44	20.87	16.81	19.56	19.16	7	8	9
ConocoPhillips	2.97	5.67	6.32	5.39	8.86	10.67	17.67	24.63	NM	8.79	14.89	17.00	39.08	21.33	38.00	30.08	24.03	18	15	13
Continental	44.23	3.41	9.04	6.34	8.25	4.18	30.51	19.34	26.77	3.86	9.76	13.00	13.50	10.89	14.96	13.08	12.75	6	4	4
Devon	5.19	8.86	7.19	10.81	11.91	9.35	16.31	16.69	57.10	8.35	13.99	18.63	38.12	22.06	29.02	29.06	22.77	13	12	11
EOG	5.73	8.18	6.35	7.48	10.16	10.22	15.09	13.56	16.20	7.69	15.27	20.08	NM	13.69	12.47	18.88	18.40	4	7	7
Hess	4.87	13.39	NM	5.39	11.09	13.97	13.46	16.84	20.36	19.84	20.60	40.97	41.34	45.77	30.57	38.78	33.87	14	16	18
INPEX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lundin	-	-	-	-	-	-	-	-	-	-	-	18.28	224.65	378.83	233.83	271.04	-	20	20	-
Marathon	25.57	16.47	4.12	7.79	4.65	8.06	15.79	33.59	31.15	5.21	33.78	26.53	17.11	15.82	19.99	17.53	20.68	10	6	10
Murphy	21.68	7.05	NM	24.20	16.46	52.07	14.00	38.69	38.69	7.98	25.04	19.54	31.29	27.77	18.80	25.15	24.04	9	11	14
Noble	5.22	7.29	10.68	13.00	5.68	13.76	16.90	14.71	33.83	41.61	7.16	22.61	31.27	12.23	36.46	21.22	16.78	16	10	6
Occidental	3.87	6.14	4.76	4.48	6.62	11.42	17.80	21.32	45.05	7.61	25.46	39.29	22.28	15.64	21.76	19.84	24.02	11	9	12
ONGC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pioneer	4.66	7.49	6.30	6.64	10.43	15.74	17.86	15.40	35.51	NM	7.30	17.22	34.46	18.71	23.53	103.07	33.64	12	19	17
PTTEP	-	-	-	-	-	-	-	13.18	17.03	8.21	29.62	65.01	107.95	66.13	36.74	61.03	56.77	17	18	19
Range	13.65	NM	5.50	7.32	7.19	8.74	12.66	10.97	13.45	6.04	4.27	5.63	5.49	4.00	4.50	4.61	4.73	2	2	2
Southwestern	5.48	9.55	5.90	7.94	8.55	10.22	16.34	15.27	9.19	5.16	6.14	7.88	NM	3.36	9.55	9.58	8.75	3	3	3
Tullow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Woodside	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Universe	4.53	7.94	6.65	7.19	8.77	11.44	19.86	18.04	35.20	9.96	15.58	19.82	33.32	18.63	20.19	22.30	20.42			

Note: Total replacement costs = (total costs incurred in exploration, development and acquisitions) / (total reserve additions), and is therefore skewed by disposals. Data excludes share of reserves of affiliates

E&P Universe total replacement costs



Bottom 10 E&P total costs by company, 2014

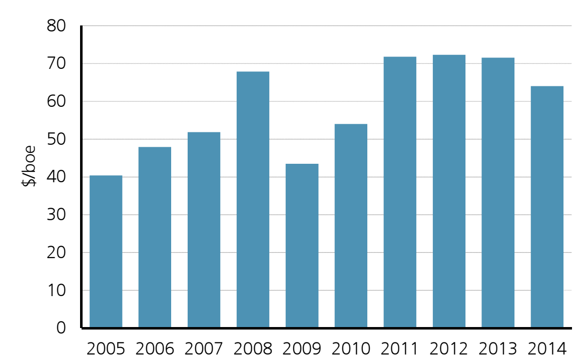


Sales realisations

$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 1 yr	Change 3 yr	Change 5 yr	Diff. from Brent 2013	Diff. from Brent 2014
BG Group	17.54	17.41	17.24	18.85	23.60	30.46	32.93	36.91	47.19	31.63	36.31	45.45	47.64	50.85	52.69	4%	16%	67%	-57.89	-46.69
BP	24.50	22.74	20.03	25.72	30.72	42.00	47.37	50.84	69.32	40.94	51.58	68.29	66.35	67.04	58.84	-12%	-14%	44%	-41.70	-40.54
Chevron	22.90	21.01	19.83	24.96	29.81	40.21	45.67	50.06	65.34	44.42	57.03	78.13	76.27	74.26	67.20	-10%	-14%	51%	-34.48	-32.18
Eni	24.70	21.33	21.73	24.23	30.31	40.85	48.27	52.55	66.66	45.96	53.84	68.52	70.31	68.76	61.84	-10%	-10%	35%	-39.98	-37.54
ExxonMobil	22.14	20.06	18.93	24.53	30.79	41.80	48.66	52.12	70.08	44.44	52.34	65.38	64.07	64.89	60.41	-7%	-8%	36%	-43.85	-38.97
GALP	-	-	-	-	-	-	-	-	-	-	95.11	109.35	117.43	112.02	96.42	-14%	-12%	-	3.28	-2.96
Lukoil	16.62	14.83	14.83	14.38	21.34	31.58	35.44	40.60	55.35	33.91	42.63	54.39	54.37	52.87	47.20	-11%	-13%	39%	-55.87	-52.18
MOL Group	-	14.79	15.65	14.87	18.08	26.26	25.73	27.97	34.23	18.94	40.68	48.00	54.84	54.86	48.67	-11%	1%	157%	-53.88	-50.71
Novatek	-	-	-	-	10.97	7.33	9.11	12.35	12.04	11.83	14.10	16.40	16.63	20.11	17.89	-11%	9%	51%	-88.63	-81.49
OMV	26.57	26.89	23.14	21.41	24.83	33.86	39.74	47.03	61.96	43.60	50.48	61.87	69.11	65.64	65.22	-1%	5%	50%	-43.10	-34.16
Petrobras	24.55	19.38	22.06	24.70	28.81	39.47	47.34	54.17	71.57	48.13	67.01	90.74	90.68	85.56	77.43	-10%	-15%	61%	-23.18	-21.95
Petro-Canada	18.56	19.44	16.18	24.50	29.08	36.46	50.84	60.19	75.53	-	-	-	-	-	-	-	-	-	-	-
PetroChina	-	20.11	19.57	23.10	27.74	37.72	46.34	52.92	67.31	43.26	56.82	75.98	72.04	70.66	67.00	-5%	-12%	55%	-38.08	-32.38
Repsol	20.36	16.39	13.12	14.90	18.11	22.38	27.93	29.68	34.67	26.48	33.82	36.81	78.37	71.80	57.65	-20%	57%	118%	-36.94	-41.73
RD/Shell	22.10	20.21	19.54	24.14	33.33	43.43	53.32	57.61	75.56	47.45	59.07	80.15	78.62	76.33	67.05	-12%	-16%	41%	-32.41	-32.33
Rosneft	-	-	-	10.92	14.36	15.96	25.13	33.97	45.42	29.56	37.07	43.12	43.88	38.43	33.05	-14%	-23%	12%	-70.31	-66.33
Sasol	-	-	-	-	18.21	14.18	16.75	16.85	18.32	19.23	17.17	18.70	20.93	18.14	21.10	16%	13%	10%	-90.60	-78.28
Sinopec	-	21.11	19.26	23.51	28.00	37.90	49.53	51.28	74.98	45.10	61.28	82.88	83.65	79.71	76.21	-4%	-8%	69%	-29.03	-23.17
Statoil	23.74	20.80	20.52	23.88	30.25	41.48	77.82	57.80	71.83	47.78	59.28	84.58	77.93	77.84	67.45	-13%	-20%	41%	-30.90	-31.93
Suncor Energy (incl. Petro-Canada from 2009)	20.10	20.31	18.36	25.66	30.78	39.23	57.92	61.68	80.32	41.36	70.58	90.32	86.15	86.84	85.43	-2%	-5%	107%	-21.90	-13.95
TOTAL	22.22	19.55	19.26	22.98	28.49	39.41	47.44	50.45	65.44	42.63	50.91	69.03	71.14	68.01	59.14	-13%	-14%	39%	-40.73	-40.24
Universe	**22.54**	**20.14**	**19.32**	**22.99**	**28.39**	**37.18**	**44.32**	**52.69**	**68.99**	**44.39**	**56.34**	**74.12**	**74.35**	**74.93**	**68.33**	**-9%**	**-8%**	**54%**	**-40.41**	**-31.05**
Excluding emerging market	**22.75**	**20.58**	**19.42**	**23.88**	**29.82**	**39.99**	**47.32**	**51.32**	**67.05**	**43.14**	**53.42**	**70.44**	**71.25**	**70.53**	**63.57**	**-10%**	**-10%**	**47%**	**-45.17**	**-35.81**
Global OilCo constituents	**22.82**	**20.61**	**19.44**	**24.00**	**30.00**	**40.37**	**47.92**	**51.87**	**67.85**	**43.56**	**54.10**	**71.57**	**72.29**	**71.44**	**63.97**	**-10%**	**-11%**	**47%**	**-44.77**	**-35.41**

Note: Sales realisations differ depending on allocation of production taxes, royalties, midstream sales, etc. Rosneft data excludes share of reserves of affiliates

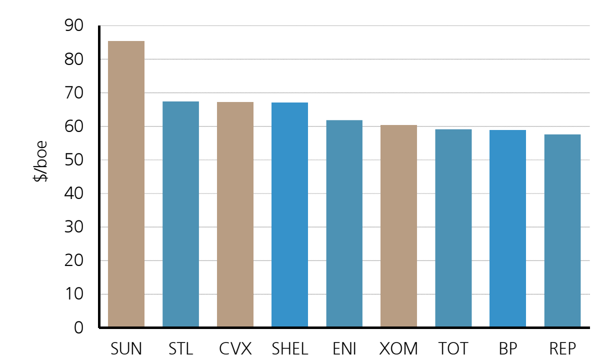
Global OilCo sales realisations



Sector comment

- It is worth keeping in mind that sales realisations consistently lie around 60-70% of prevailing Brent crude oil
- The differential in sales realisations is generated by quality differentials of actual production relative to benchmark and the fact that ~50% of production is natural gas

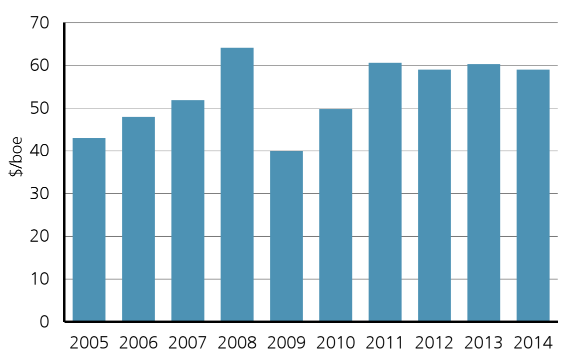
Global OilCo sales realisations by company, 2014



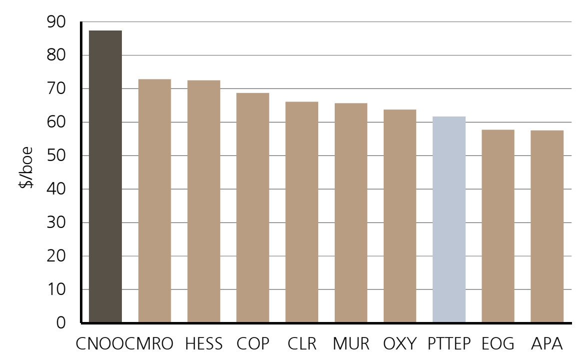
$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 1 yr	Diff. From Brent 2013	2014
Anadarko	25.41	23.00	19.16	26.12	31.34	44.44	52.36	67.34	68.24	36.50	42.85	52.00	46.07	46.53	54.59	17%	62.21	44.79
Apache	24.24	22.47	20.54	27.56	32.36	44.95	44.14	48.63	63.03	40.27	50.75	61.56	57.64	57.30	57.57	0%	51.44	41.81
Cabot	19.21	25.07	18.46	27.28	31.11	41.38	44.88	44.74	52.27	46.64	35.64	31.36	27.02	25.35	24.52	-3%	83.39	74.86
Chesapeake	21.02	30.49	18.79	28.99	32.04	41.90	58.29	47.24	55.95	33.44	32.72	30.27	26.48	28.84	31.72	10%	79.90	67.66
CNOOC	26.13	22.14	22.71	26.20	31.98	42.15	51.30	56.93	74.38	53.76	68.32	96.62	97.65	94.27	87.27	-7%	14.47	12.11
Concho	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ConocoPhillips	23.62	20.70	21.03	25.18	31.53	43.60	47.07	52.08	68.02	41.09	57.18	71.75	74.35	73.37	68.75	-6%	35.37	30.63
Continental	24.66	22.93	20.33	26.44	-	50.19	51.97	57.10	78.29	44.83	59.99	72.96	66.62	72.70	66.11	-9%	36.04	33.27
Devon	22.47	22.07	17.66	25.86	30.38	39.98	37.86	42.81	49.31	26.17	31.85	34.53	28.69	33.73	40.31	20%	75.01	59.07
EOG	21.99	23.03	17.10	26.51	30.22	40.97	37.21	38.15	50.67	25.94	34.07	44.14	46.77	57.52	57.72	0%	51.23	41.66
Hess	22.52	22.43	22.97	22.62	26.72	33.77	48.75	53.49	68.89	44.97	56.11	72.98	72.30	80.17	72.55	-10%	28.57	26.83
INPEX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lundin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marathon	17.71	20.84	20.55	23.33	28.66	40.74	48.02	48.66	64.79	45.74	60.48	70.54	72.15	68.65	72.83	6%	40.09	26.55
Murphy	83.74	24.12	23.24	30.30	37.54	56.14	59.97	65.53	96.96	50.94	54.27	64.98	65.09	71.14	65.70	-8%	37.61	33.68
Noble	23.15	23.22	16.88	22.64	29.61	38.03	41.93	41.35	46.69	27.39	36.37	43.48	47.51	48.46	45.10	-7%	60.28	54.28
Occidental	28.48	30.57	24.17	30.22	36.90	50.60	58.18	64.23	78.22	49.37	55.46	68.86	66.41	67.70	63.76	-6%	41.04	35.62
ONGC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pioneer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PTTEP	-	-	-	-	-	-	-	34.08	41.04	35.77	38.13	50.95	59.83	64.03	61.61	-4%	44.71	37.77
Range	-	-	21.74	25.40	26.83	36.84	44.34	43.97	56.31	34.21	31.58	36.51	31.75	32.58	38.35	18%	76.16	61.03
Southwestern	18.66	23.21	18.30	25.70	31.80	39.68	40.78	42.05	45.99	31.82	28.03	25.19	20.85	21.96	22.37	2%	86.78	77.01
Tullow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Woodside	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Universe	24.07	23.06	20.75	25.99	31.48	43.07	47.99	51.88	64.14	39.93	49.82	60.67	59.02	60.34	59.05	-2%	48.40	40.33

Note: Sales realisations differ depending on allocation of production taxes, royalties, midstream sales, etc

E&P Universe sales realisations



Top 10 E&P sales realisations by company

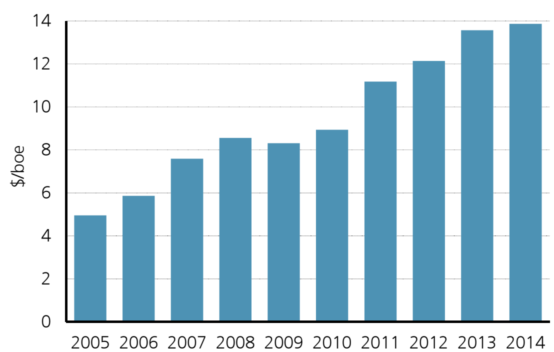


Production costs

$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 1 yr	Change 3 yr	Change 5 yr
BG Group	2.76	2.58	2.75	2.69	3.14	3.30	3.51	4.25	4.88	4.83	5.88	5.68	6.05	7.06	8.37	19%	47%	73%
BP	2.70	2.88	2.71	2.94	3.46	4.41	5.51	6.97	7.12	6.29	6.64	9.86	12.17	12.73	12.27	-4%	24%	95%
Chevron	4.34	4.61	4.92	4.59	5.16	5.97	6.40	8.14	9.90	9.59	10.50	13.52	14.96	16.52	17.14	4%	27%	79%
Eni	2.45	2.93	2.87	2.98	3.21	3.50	4.00	4.99	5.45	5.76	6.16	7.26	7.06	8.30	8.45	2%	16%	47%
ExxonMobil	3.29	3.40	3.62	4.15	4.62	5.15	5.81	6.86	8.36	9.82	10.13	11.84	12.51	14.80	15.30	3%	29%	56%
GALP	-	-	-	-	-	-	-	-	-	-	13.15	17.43	15.38	13.40	12.24	-9%	-30%	-
Lukoil	1.95	2.64	2.49	2.51	2.46	2.65	3.01	3.52	4.03	3.48	4.26	4.87	4.87	5.36	5.53	3%	14%	59%
MOL Group	-	1.99	2.45	2.84	2.63	2.98	2.97	3.92	4.69	2.75	5.50	5.67	7.03	8.84	8.20	-7%	45%	199%
Novatek	-	-	-	-	0.58	0.46	0.33	0.63	0.57	0.50	0.60	0.54	0.68	0.77	0.57	-25%	6%	16%
OMV	5.69	6.00	5.60	5.24	5.59	10.59	11.13	13.14	14.28	11.94	12.16	13.44	12.08	13.22	15.69	19%	17%	31%
Petrobras	8.17	7.16	8.12	9.59	10.36	14.36	16.25	17.80	23.03	19.98	24.18	32.21	32.47	33.27	32.30	-3%	0%	62%
Petro-Canada	3.16	4.03	3.62	5.01	6.05	7.34	9.96	17.84	16.97	-	-	-	-	-	-	-	-	-
PetroChina	-	3.96	3.97	4.00	4.16	4.80	6.44	7.74	9.04	8.80	9.64	11.42	11.98	13.48	13.96	4%	22%	59%
Repsol	3.21	2.88	1.71	2.00	2.69	3.13	3.69	4.75	6.15	5.76	7.84	8.98	15.76	14.74	13.26	-10%	48%	130%
RD/Shell	2.71	2.66	2.83	3.19	4.44	7.51	8.60	10.30	11.53	10.56	10.22	12.63	13.75	15.37	16.25	6%	29%	54%
Rosneft	-	-	-	2.04	2.32	2.10	2.49	3.33	2.56	2.34	2.70	2.63	2.91	4.14	3.94	-5%	50%	69%
Sasol	-	-	-	-	6.25	3.41	2.33	2.60	3.14	2.26	4.05	3.47	4.51	4.82	5.94	23%	71%	163%
Sinopec	-	6.12	6.08	6.44	6.69	8.07	9.35	11.60	12.41	12.78	14.05	16.04	17.45	18.99	18.29	-4%	14%	43%
Statoil	3.01	2.95	2.95	3.01	3.46	3.42	6.38	8.08	7.12	6.40	7.27	8.30	7.99	8.77	8.33	-5%	0%	30%
Suncor Energy (incl. Petro-Canada from 2009)	4.66	5.02	4.71	5.82	6.89	9.34	14.24	19.75	21.81	21.42	24.43	33.05	33.27	33.64	33.46	-1%	1%	56%
TOTAL	2.53	2.53	2.49	2.57	2.74	3.07	3.74	4.86	6.32	5.79	6.08	7.00	7.86	8.83	9.82	11%	40%	70%
Universe	**3.53**	**3.55**	**3.62**	**3.89**	**4.35**	**5.35**	**6.26**	**8.31**	**9.57**	**9.08**	**10.08**	**12.50**	**13.28**	**14.83**	**15.07**	**2%**	**21%**	**66%**
Excluding emerging market	**3.11**	**3.19**	**3.20**	**3.41**	**3.98**	**5.01**	**5.87**	**7.57**	**8.53**	**8.26**	**8.90**	**11.02**	**11.91**	**13.32**	**13.71**	**3%**	**24%**	**66%**
Global OilCo constituents	**3.10**	**3.19**	**3.20**	**3.42**	**3.99**	**4.95**	**5.86**	**7.58**	**8.55**	**8.32**	**8.95**	**11.19**	**12.16**	**13.58**	**13.88**	**2%**	**24%**	**67%**

Note: Definition of production costs differ depending on allocation of production taxes, royalties, midstream sales, etc. Rosneft data excludes share of reserves of affiliates

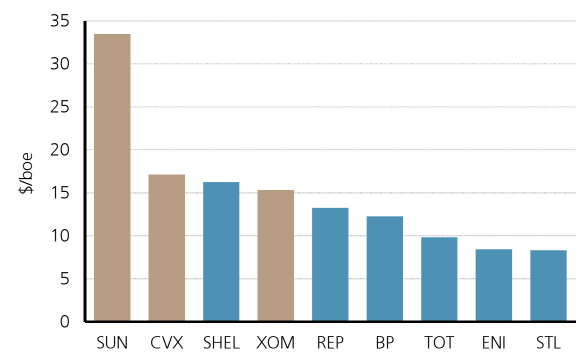
Global OilCo production costs



Sector comment

- Production costs up by ~2/3rds over the course of 5 years
- Indeed, with a plateauing around the time of the financial crisis, production costs have been rising pretty much since the start of the last decade and are now over 4x higher than they were in 2000
- In our view, while there has been input cost inflation, the industry is heavily responsible for a significant proportion of the rise, with growing indiscipline as commodity prices rose

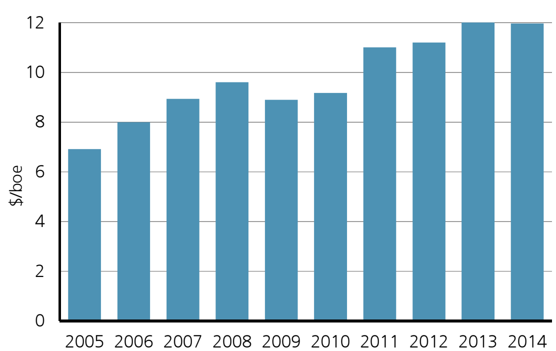
Global OilCo production costs by company, 2014



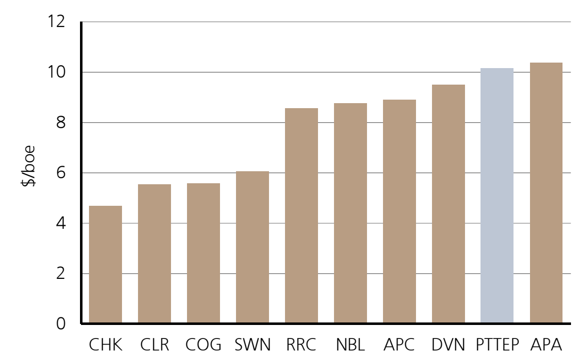
$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 1 yr	Change 3 yr	Change 5 yr
Anadarko	5.28	3.70	3.81	4.40	5.10	5.35	7.78	8.14	9.45	8.15	8.26	9.04	8.46	8.63	8.90	3%	-2%	9%
Apache	2.87	3.46	3.98	4.99	5.77	6.88	8.02	8.74	10.56	8.48	9.21	10.62	9.77	10.31	10.38	1%	-2%	22%
Cabot	4.19	4.32	4.20	5.21	5.94	7.36	7.88	8.15	8.87	7.06	5.53	5.78	5.87	5.38	5.58	4%	-3%	-21%
Chesapeake	2.24	2.80	3.25	3.08	3.39	4.06	5.08	5.38	6.33	5.80	5.17	5.39	5.50	4.74	4.68	-1%	-13%	-19%
CNOOC	2.95	2.94	3.61	4.20	4.40	4.68	5.29	6.27	7.37	8.00	7.32	9.64	11.25	12.99	12.85	-1%	33%	61%
Concho	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ConocoPhillips	6.05	7.03	7.11	6.78	7.26	6.91	7.79	9.33	10.13	9.71	10.21	13.05	14.09	16.28	16.13	-1%	24%	66%
Continental	6.36	7.52	6.75	9.11	-	9.54	9.45	10.27	13.35	6.84	5.90	6.12	5.47	5.69	5.54	-3%	-9%	-19%
Devon	4.93	5.41	4.72	5.63	6.23	7.51	8.26	9.64	7.79	7.17	7.41	7.69	8.32	8.98	9.49	6%	23%	32%
EOG	3.37	3.91	3.66	4.20	5.17	6.34	6.96	7.89	9.27	7.77	9.61	11.29	12.10	13.61	14.25	5%	26%	83%
Hess	4.05	4.49	4.99	5.83	6.45	8.08	9.34	11.28	13.15	11.88	12.35	17.08	18.27	19.96	18.07	-9%	6%	52%
INPEX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lundin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marathon	5.04	5.16	5.73	4.85	7.07	8.80	7.79	9.08	10.26	10.73	12.55	15.88	14.43	16.22	18.03	11%	14%	68%
Murphy	16.19	5.73	5.49	5.88	6.28	7.92	11.81	14.14	14.38	10.98	12.93	15.44	15.75	17.95	14.50	-19%	-6%	32%
Noble	4.31	4.56	4.36	5.16	5.64	6.81	8.14	7.56	8.21	7.31	7.71	8.27	8.73	9.01	8.76	-3%	6%	20%
Occidental	4.67	6.28	5.57	5.97	6.95	8.66	11.23	12.90	13.34	12.77	12.76	15.95	16.39	16.50	17.40	5%	9%	36%
ONGC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pioneer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PTTEP	-	-	-	-	-	-	-	3.68	3.64	4.78	4.87	7.17	7.87	9.92	10.15	2%	41%	112%
Range	-	-	3.49	3.76	3.87	4.61	4.84	5.48	6.05	5.02	5.28	7.29	7.16	9.03	8.57	-5%	18%	71%
Southwestern	3.33	3.56	3.82	3.64	3.93	4.07	5.68	5.16	5.99	5.18	5.59	5.63	5.37	5.74	6.06	6%	8%	17%
Tullow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Woodside	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Universe	**4.74**	**5.05**	**5.18**	**5.58**	**6.21**	**6.92**	**8.00**	**8.93**	**9.61**	**8.90**	**9.18**	**11.02**	**11.21**	**12.04**	**11.97**	**-1%**	**9%**	**35%**

Note: Definition of production costs differ depending on allocation of production taxes, royalties, midstream sales, etc

E&P Universe production costs



Bottom 10 E&P production costs by company, 2014

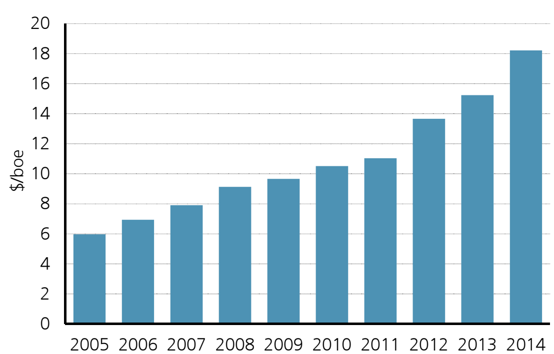


Depreciation

$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 1 yr	Change 3 yr	Change 5 yr	Capitalised costs 2014	Capitalised costs Diff 13
BG Group	4.41	3.90	3.65	3.86	4.10	3.97	4.19	4.75	5.59	5.85	7.16	7.66	9.05	11.30	10.99	-3%	43%	88%	19.59	8.30
BP	4.33	5.01	5.81	6.23	5.66	5.65	6.38	7.78	8.41	8.99	8.65	10.38	13.08	14.53	16.37	13%	58%	82%	20.81	7.73
Chevron	3.43	3.54	3.83	4.26	4.45	5.69	6.99	8.19	9.30	11.61	12.43	12.53	13.55	15.12	17.24	14%	38%	49%	29.49	15.94
Eni	4.02	4.48	5.47	5.46	6.17	7.07	7.59	8.19	12.18	12.56	11.76	12.69	13.86	13.94	17.34	24%	37%	38%	20.09	6.22
ExxonMobil	3.53	3.41	3.76	4.08	4.63	5.17	5.73	6.61	7.34	7.13	9.06	9.61	10.85	12.23	12.21	0%	27%	71%	17.18	6.33
GALP	-	-	-	-	-	-	-	-	-	-	48.56	39.44	29.31	32.14	22.21	-31%	-44%	-	75.71	46.40
Lukoil	1.15	1.14	1.11	1.04	1.07	1.24	1.61	1.76	2.37	3.24	3.49	3.70	3.87	4.57	8.00	75%	116%	146%	5.98	2.11
MOL Group	-	2.32	2.34	2.87	3.09	3.48	4.68	6.75	5.71	3.32	11.49	12.97	14.46	26.52	25.99	-2%	100%	684%	-	-
Novatek	-	-	-	-	0.30	0.64	0.66	0.70	0.67	0.70	0.78	0.90	0.95	1.04	1.12	7%	24%	59%	0.94	-0.01
OMV	3.69	4.33	3.61	4.03	5.32	4.08	4.42	5.10	6.43	7.91	11.47	10.70	12.69	14.42	18.48	28%	73%	134%	22.34	9.66
Petrobras	2.72	2.44	2.42	1.73	2.36	2.52	3.16	4.81	4.82	4.90	6.80	8.11	8.35	10.34	9.69	-6%	19%	98%	17.11	8.76
Petro-Canada	3.25	3.38	3.44	4.69	5.24	5.38	7.15	11.11	11.18	-	-	-	-	-	-	-	-	-	-	-
PetroChina	-	2.50	2.43	2.74	3.15	2.97	3.73	4.53	6.13	6.91	8.18	9.58	11.03	11.98	13.12	9%	37%	90%	12.01	0.98
Repsol	3.40	3.48	3.33	3.33	3.61	3.83	5.36	6.07	6.96	7.97	8.47	8.59	13.10	14.66	16.04	9%	87%	101%	12.56	-0.54
RD/Shell	2.99	3.19	4.57	6.00	7.42	8.56	9.68	10.65	11.04	11.32	12.21	9.96	12.29	17.95	17.66	-2%	77%	56%	21.32	9.03
Rosneft	-	-	-	1.69	1.30	2.13	2.17	3.57	3.97	5.39	6.89	6.15	5.79	6.67	5.88	-12%	-5%	9%	3.88	-1.92
Sasol	-	-	-	-	4.15	3.21	3.08	2.85	2.18	2.77	3.84	3.53	11.70	12.49	10.72	-14%	204%	287%	14.34	2.64
Sinopec	-	2.89	3.26	3.45	4.46	3.97	5.06	7.52	11.56	11.49	12.21	14.19	14.81	16.98	18.57	9%	31%	62%	19.49	4.68
Statoil	4.41	4.32	4.55	4.85	5.29	5.63	13.29	9.22	10.43	10.49	11.43	13.07	14.58	17.57	24.35	39%	86%	132%	21.84	7.27
Suncor Energy (incl. Petro-Canada from 2009)	3.52	3.43	3.61	4.54	5.14	5.83	6.14	8.78	9.27	8.04	14.14	17.30	19.01	20.00	17.74	-11%	3%	121%	11.18	-7.83
TOTAL	4.03	3.85	4.04	4.22	4.52	4.73	5.13	5.98	7.47	8.24	8.87	9.90	15.58	14.98	26.11	74%	164%	217%	30.77	15.19
Universe	**3.34**	**3.46**	**3.91**	**4.18**	**4.50**	**4.69**	**5.42**	**6.84**	**7.98**	**8.58**	**9.70**	**10.31**	**11.87**	**14.01**	**15.94**	**14%**	**55%**	**86%**	**17.07**	**5.21**
Excluding emerging market	**3.73**	**3.87**	**4.45**	**4.95**	**5.35**	**5.88**	**6.81**	**7.76**	**8.96**	**9.51**	**10.42**	**10.92**	**13.15**	**15.08**	**17.73**	**18%**	**62%**	**86%**	**20.97**	**7.82**
Global OilCo constituents	**3.72**	**3.87**	**4.47**	**4.98**	**5.38**	**5.96**	**6.93**	**7.91**	**9.13**	**9.67**	**10.53**	**11.05**	**13.33**	**15.25**	**17.98**	**18%**	**63%**	**86%**	**20.99**	**7.66**

Note: Figures distorted by one-off write-offs, allocation of decommissioning costs and PSCs. Rosneft data excludes share of reserves of affiliates

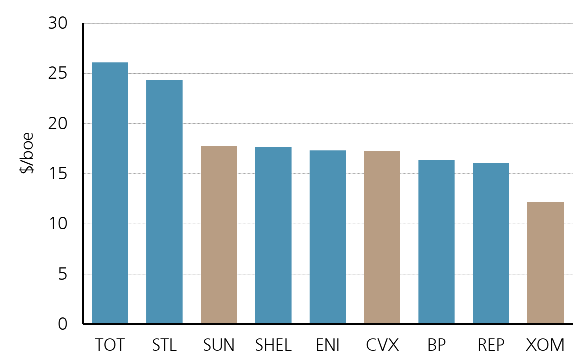
Global OilCo unit depreciation



Sector comment

- Evident here is by how much unit DD&A rates lag F&D costs – presently by more than $10/boe on average. This suggests that earnings are overstating the economic returns that are really accruing to the industry, unless of course there is a very significant timing difference (which we don't believe to be the case)

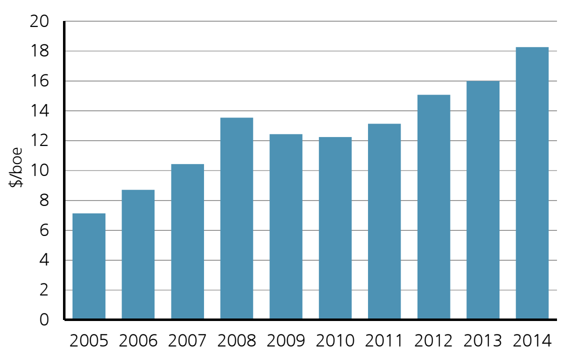
Global OilCo unit depreciation by company, 2014



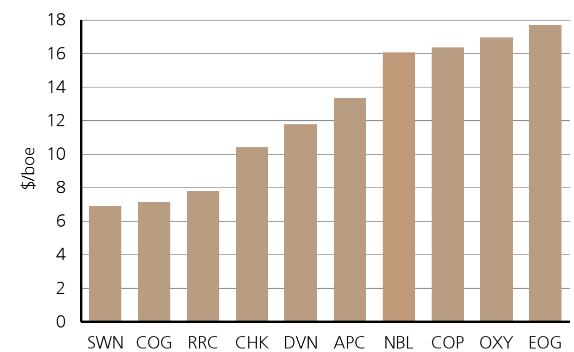
$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 1 yr	Change 3 yr	Change 5 yr	Capitalised Costs 2014	Diff 13
Anadarko	5.13	5.53	5.40	6.36	7.15	7.99	8.95	12.30	14.60	14.81	14.88	14.57	13.86	12.76	13.38	5%	-8%	-10%	16.57	3.81
Apache	5.96	6.40	6.61	6.87	7.28	8.35	9.73	11.25	39.90	24.26	12.61	15.14	23.81	21.21	40.82	92%	170%	68%	26.56	5.36
Cabot	5.67	6.60	6.72	13.19	8.13	8.47	9.47	11.56	16.35	15.46	16.74	10.97	10.13	9.45	7.14	-24%	-35%	-54%	6.55	-2.90
Chesapeake	4.53	6.43	7.31	8.26	9.63	11.45	14.09	15.41	14.03	9.08	8.08	8.20	10.58	10.59	10.40	-2%	27%	15%	16.17	5.59
CNOOC	3.58	3.24	3.84	4.48	4.91	4.91	5.60	6.19	7.42	10.21	12.51	15.91	16.91	23.47	23.19	-1%	46%	127%	42.47	19.00
Concho	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.74	-
ConocoPhillips	3.21	3.19	3.97	4.34	5.05	5.83	8.45	10.48	11.68	12.23	12.65	12.81	12.86	14.26	16.38	15%	28%	34%	15.48	1.23
Continental	3.73	5.93	5.87	8.06	-	6.72	7.08	8.63	12.40	15.01	15.16	17.02	19.13	19.23	21.05	9%	24%	40%	26.69	7.46
Devon	5.48	6.21	5.89	7.32	8.69	9.07	9.62	11.81	12.40	7.86	7.35	8.25	10.13	9.76	11.78	21%	43%	50%	14.01	4.25
EOG	5.30	5.80	5.95	6.42	6.61	7.43	8.52	10.03	10.24	11.05	12.72	15.33	17.68	18.61	17.71	-5%	16%	60%	19.50	0.90
Hess	4.85	5.77	7.66	7.31	7.18	7.74	8.66	10.72	13.71	14.26	17.67	19.34	22.80	23.74	26.35	11%	36%	85%	35.95	12.21
INPEX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lundin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marathon	4.92	5.44	5.41	5.25	5.88	6.52	6.45	7.14	9.71	12.53	15.99	17.04	16.09	15.62	17.96	15%	5%	43%	19.59	3.97
Murphy	16.32	5.52	6.49	7.42	6.50	8.86	9.85	12.52	15.04	14.41	16.37	14.61	19.41	21.56	23.89	11%	63%	66%	27.72	6.15
Noble	7.14	8.08	7.06	9.13	8.18	7.75	9.88	10.23	9.96	10.43	10.93	11.56	15.34	15.70	16.09	2%	39%	54%	20.18	4.48
Occidental	3.93	4.55	4.47	5.03	5.26	6.10	8.36	9.71	8.97	10.15	10.39	11.45	13.57	16.53	16.96	3%	48%	67%	14.94	-1.59
ONGC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pioneer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.11	-
PTTEP	-	-	-	-	-	-	-	6.03	7.10	9.14	10.06	10.37	12.19	13.85	19.78	43%	91%	116%	39.17	25.32
Range	-	-	8.42	8.95	8.61	8.77	9.21	11.25	12.75	14.08	9.13	10.12	9.70	8.61	7.79	-10%	-23%	-45%	8.95	0.33
Southwestern	6.57	7.02	7.14	7.22	7.42	8.75	11.87	14.89	12.31	9.47	8.32	7.99	8.13	6.72	6.91	3%	-14%	-27%	12.28	5.56
Tullow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Woodside	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31.21	-
Universe	**4.66**	**5.05**	**5.35**	**5.83**	**6.40**	**7.14**	**8.71**	**10.44**	**13.54**	**12.44**	**12.25**	**13.14**	**15.07**	**16.00**	**18.26**	**14%**	**39%**	**47%**	**20.42**	**4.42**

Note: Figures distorted by one-off write-offs, allocation of decommissioning costs and PSCs

E&P Universe unit depreciation



Top 10 E&P unit depreciation by company, 2014

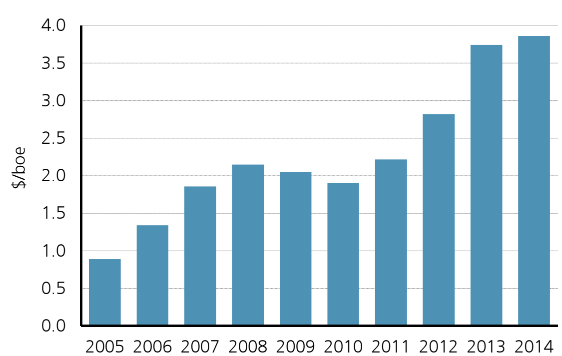


Exploration expense

$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 1 yr	Change 3 yr	Change 5 yr
BG Group	0.80	0.95	0.85	0.86	1.38	1.80	2.30	3.05	3.74	3.96	3.25	2.76	2.84	3.08	3.40	10%	23%	-14%
BP	0.55	0.42	0.56	0.50	0.62	0.69	1.08	0.81	0.94	1.12	0.91	1.94	2.00	4.84	5.07	5%	161%	352%
Chevron	0.99	1.18	0.66	0.71	0.88	0.94	1.59	1.55	1.43	1.56	1.31	1.44	2.07	2.26	2.43	8%	69%	55%
Eni	1.21	1.12	1.21	1.28	0.89	0.86	1.09	3.88	4.65	3.39	2.44	2.85	3.85	4.04	3.68	-9%	29%	8%
ExxonMobil	0.67	0.86	0.68	0.76	0.83	0.76	0.91	1.18	1.27	1.80	1.79	1.72	1.64	1.85	1.56	-16%	-9%	-14%
GALP	-	-	-	-	-	-	-	-	-	-	4.84	14.47	10.09	17.17	15.21	-11%	5%	-
Lukoil	0.25	0.27	0.16	0.23	0.27	0.48	0.27	0.39	0.61	0.27	0.42	0.69	0.46	0.74	1.29	74%	88%	376%
MOL Group	-	1.39	1.40	1.34	1.02	1.84	0.74	1.37	2.26	1.28	0.71	0.40	1.36	1.72	2.04	19%	413%	59%
Novatek	-	-	-	-	0.10	0.07	0.09	0.10	0.18	0.08	0.20	0.18	0.18	0.04	0.01	-78%	-96%	-90%
OMV	1.58	2.46	2.13	1.89	1.91	1.35	1.81	2.58	3.66	2.76	2.41	4.33	4.63	5.10	5.41	6%	25%	96%
Petrobras	0.86	0.75	0.72	0.70	0.88	1.32	1.20	1.82	2.16	2.40	2.51	3.00	4.50	3.51	3.46	-1%	15%	44%
Petro-Canada	1.38	2.21	1.37	1.14	1.10	1.45	2.22	3.16	3.89	-	-	-	-	-	-	-	-	-
PetroChina	-	1.00	1.08	1.38	1.48	1.79	2.18	2.56	2.64	2.35	2.73	2.85	2.80	2.91	2.44	-16%	-14%	4%
Repsol	0.43	0.49	0.71	0.52	0.90	0.82	1.33	2.14	2.40	1.96	2.06	2.38	11.24	10.93	20.52	88%	763%	947%
RD/Shell	0.63	0.72	0.74	0.87	1.05	1.18	1.48	2.06	2.36	2.52	2.31	2.70	3.63	6.01	4.57	-24%	69%	81%
Rosneft	-	-	-	0.14	0.34	0.31	0.29	0.20	0.32	0.44	0.55	0.49	0.80	0.34	0.29	-15%	-40%	-33%
Sasol	-	-	-	-	13.04	2.03	1.67	6.33	2.06	2.94	2.40	5.24	3.68	4.56	1.52	-67%	-71%	-48%
Sinopec	-	1.53	1.75	2.44	2.49	2.47	3.10	4.46	3.21	4.07	4.01	5.03	5.71	4.58	3.97	-13%	-21%	-2%
Statoil	0.76	0.88	0.78	0.85	0.67	1.18	4.01	3.06	4.06	4.10	4.24	4.15	4.71	4.93	7.62	55%	84%	86%
Suncor Energy (incl. Petro-Canada from 2009)	0.82	1.24	0.85	0.74	0.69	0.98	1.28	1.81	2.17	-	-	0.59	1.54	1.52	1.70	12%	189%	-
TOTAL	0.72	0.74	0.59	0.50	0.62	0.68	1.08	1.58	1.58	1.38	1.63	2.19	3.00	3.66	3.39	-7%	54%	145%
Universe	**0.78**	**0.82**	**0.79**	**0.82**	**0.90**	**1.01**	**1.33**	**1.92**	**2.16**	**2.09**	**2.05**	**2.38**	**2.93**	**3.33**	**3.34**	**0%**	**41%**	**60%**
Excluding emerging market	**0.74**	**0.81**	**0.76**	**0.76**	**0.83**	**0.92**	**1.38**	**1.91**	**2.23**	**2.13**	**1.96**	**2.29**	**2.91**	**3.80**	**3.93**	**4%**	**71%**	**84%**
Global OilCo constituents	**0.74**	**0.80**	**0.76**	**0.75**	**0.81**	**0.89**	**1.34**	**1.86**	**2.15**	**2.06**	**1.90**	**2.24**	**2.88**	**3.80**	**3.92**	**3%**	**75%**	**91%**

Note: Rosneft data excludes share of reserves of affiliates

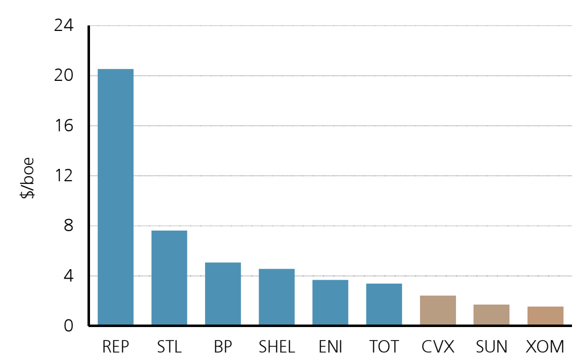
Global OilCo unit exploration expense



Sector comment

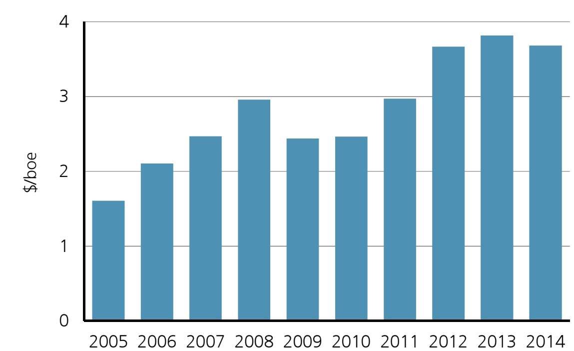
- Exploration expensed is a function of costs taken directly to the income statement - generally G&G costs - plus non-cash write-offs of previously capitalised well costs
- In the lower oil price environment, spending on exploration is very likely to fall. All things being equal, this might suggest a fall in exploration charges, but a more cautious view of the outlook and the potential shelving of project developments or continuing plans may result in some more significant write-offs through 2015

Global OilCo unit exploration by company, 2014

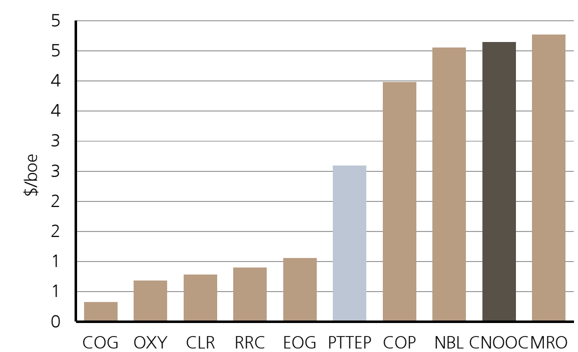


$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 1 yr	Change 3 yr	Change 5 yr
Anadarko	-	-	-	-	-	-	3.91	4.26	6.68	4.94	4.16	4.37	7.27	4.68	5.24	12%	20%	6%
Apache	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cabot	1.78	5.26	2.64	3.92	3.40	4.40	3.36	2.79	1.97	2.96	1.96	1.17	0.84	0.26	0.32	23%	-72%	-89%
Chesapeake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CNOOC	0.77	1.31	1.26	0.79	1.14	1.02	1.29	2.68	2.52	2.07	2.56	2.71	4.49	7.05	4.65	-34%	71%	124%
Concho	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ConocoPhillips	1.12	0.98	1.46	1.03	1.27	1.24	1.24	1.52	2.04	1.79	1.88	2.05	2.84	2.46	3.99	62%	95%	123%
Continental	2.84	4.07	1.91	3.28	-	0.73	2.19	0.86	3.35	0.93	0.81	1.24	0.66	0.70	0.79	12%	-36%	-15%
Devon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EOG	1.25	2.05	1.60	1.71	2.44	2.25	2.45	2.50	2.02	1.68	1.81	1.44	1.17	1.26	1.06	-15%	-26%	-37%
Hess	2.10	2.32	1.94	2.70	2.25	3.18	4.12	3.67	5.09	5.45	5.55	8.68	7.10	8.27	6.89	-17%	-21%	26%
INPEX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lundin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marathon	1.69	0.95	1.25	1.06	1.40	1.77	2.69	3.61	3.58	2.07	3.31	4.43	4.11	5.59	4.77	-15%	8%	131%
Murphy	9.93	3.52	3.22	3.11	3.73	5.43	6.06	5.19	5.46	3.05	2.71	5.67	3.55	5.83	5.32	-9%	-6%	74%
Noble	2.47	3.71	3.64	3.13	2.43	2.99	2.19	2.58	2.31	1.44	2.49	3.43	4.90	4.15	4.55	10%	33%	217%
Occidental	0.56	1.12	0.97	0.73	1.08	1.69	1.40	2.02	1.39	1.14	1.02	0.96	0.87	0.63	0.69	9%	-29%	-40%
ONGC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pioneer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PTTEP	-	-	-	-	-	-	-	1.33	2.56	2.28	0.75	2.03	1.90	1.47	2.59	76%	28%	14%
Range	-	-	1.26	1.44	1.78	2.10	2.62	2.21	2.88	1.75	2.01	2.41	1.52	1.13	0.90	-20%	-63%	-49%
Southwestern	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tullow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Woodside	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Universe	1.25	1.31	1.34	1.17	1.34	1.61	2.11	2.47	2.96	2.44	2.46	2.97	3.67	3.82	3.68	-4%	24%	51%

E&P Universe unit exploration expense



Bottom 10 E&P unit exploration by company, 2014

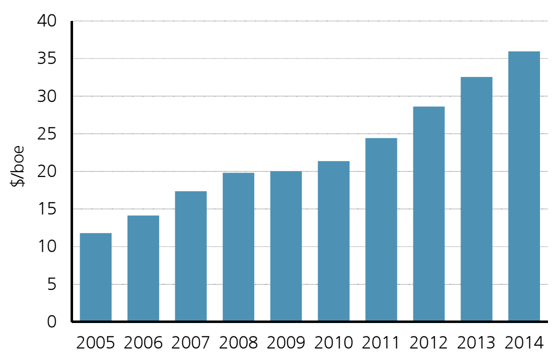


Technical costs

Million boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 1 yr	Change 3 yr	Change 5 yr	NI $/boe 2014
BG Group	7.97	7.43	7.25	7.41	8.62	9.07	10.00	12.06	14.21	14.65	16.29	16.11	17.95	21.44	22.76	6%	41%	55%	9.20
BP	7.58	8.31	9.08	9.68	9.73	10.75	12.97	15.56	16.47	16.40	16.19	22.18	27.25	32.09	33.71	5%	52%	105%	6.44
Chevron	8.76	9.32	9.41	9.55	10.48	12.59	14.99	17.87	20.63	22.76	24.24	27.48	30.58	33.90	36.81	9%	34%	62%	15.57
Eni	7.69	8.53	9.55	9.72	10.26	11.43	12.68	17.06	22.28	21.71	20.36	22.81	24.78	26.28	29.46	12%	29%	36%	9.36
ExxonMobil	7.49	7.68	8.06	8.99	10.08	11.08	12.46	14.65	16.97	18.75	20.98	23.16	25.00	28.87	29.07	1%	25%	55%	12.04
GALP	-	-	-	-	-	-	-	-	-	-	66.55	71.34	54.77	62.72	49.66	-21%	-30%	-	3.35
Lukoil	3.35	4.05	3.77	3.79	3.80	4.37	4.89	5.67	7.01	6.99	8.17	9.25	9.20	10.68	14.82	39%	60%	112%	5.58
MOL Group	-	5.70	6.18	7.06	6.74	8.30	8.39	12.04	12.66	7.34	17.70	19.03	22.85	37.09	36.23	-2%	90%	393%	7.71
Novatek	-	-	-	-	0.98	1.17	1.07	1.43	1.41	1.27	1.57	1.63	1.82	1.85	1.70	-8%	4%	33%	6.45
OMV	10.95	12.79	11.34	11.17	12.82	16.02	17.37	20.81	24.37	22.61	26.04	28.47	29.39	32.74	39.58	21%	39%	75%	12.67
Petrobras	11.74	10.35	11.26	12.01	13.60	18.19	20.60	24.44	30.01	27.28	33.49	43.32	45.32	47.11	45.45	-4%	5%	67%	16.44
Petro-Canada	7.78	9.62	8.42	10.84	12.39	14.17	19.33	32.11	32.04	-	-	-	-	-	-	-	-	-	-
PetroChina	-	7.46	7.48	8.12	8.79	9.56	12.35	14.83	17.81	18.06	20.55	23.85	25.80	28.37	29.52	4%	24%	63%	19.41
Repsol	7.04	6.85	5.76	5.85	7.19	7.78	10.38	12.95	15.51	15.69	18.37	19.95	40.10	40.33	49.83	24%	150%	217%	1.97
RD/Shell	6.33	6.57	8.15	10.06	12.91	17.25	19.75	23.01	24.93	24.40	24.74	25.29	29.67	39.33	38.48	-2%	52%	58%	6.13
Rosneft	-	-	-	3.86	3.97	4.54	4.95	7.11	6.85	8.16	10.14	9.27	9.50	11.15	10.11	-9%	9%	24%	5.26
Sasol	-	-	-	-	23.43	8.66	7.08	11.79	7.37	7.97	10.29	12.24	19.89	21.87	18.18	-17%	49%	128%	-23.17
Sinopec	-	10.54	11.08	12.33	13.65	14.51	17.51	23.58	27.18	28.33	30.27	35.26	37.97	40.55	40.82	1%	16%	44%	17.51
Statoil	8.19	8.15	8.29	8.71	9.42	10.24	23.67	20.36	21.60	20.99	22.93	25.52	27.28	31.27	40.30	29%	58%	92%	2.21
Suncor Energy (incl. Petro-Canada from 2009)	9.00	9.70	9.17	11.10	12.72	16.15	21.66	30.34	33.26	29.46	38.56	50.35	52.27	53.64	51.20	-5%	2%	74%	17.56
TOTAL	7.27	7.11	7.11	7.30	7.88	8.47	9.95	12.43	15.37	15.41	16.58	19.10	26.44	27.47	39.32	43%	106%	155%	1.05
Universe	**7.65**	**7.83**	**8.32**	**8.89**	**9.75**	**11.05**	**13.00**	**17.07**	**19.71**	**19.76**	**21.84**	**25.18**	**28.08**	**32.17**	**34.34**	**7%**	**36%**	**74%**	**11.79**
Excluding emerging market	**7.58**	**7.87**	**8.41**	**9.12**	**10.16**	**11.81**	**14.06**	**17.24**	**19.72**	**19.90**	**21.28**	**24.23**	**27.97**	**32.19**	**35.36**	**10%**	**46%**	**78%**	**8.51**
Global OilCo constituents	**7.56**	**7.86**	**8.42**	**9.14**	**10.18**	**11.80**	**14.13**	**17.35**	**19.83**	**20.05**	**21.38**	**24.48**	**28.37**	**32.63**	**35.78**	**10%**	**46%**	**78%**	**8.39**

Note: Technical costs = Exploration expenses + DD&A + Production costs. Rosneft data excludes share of reserves of affiliates

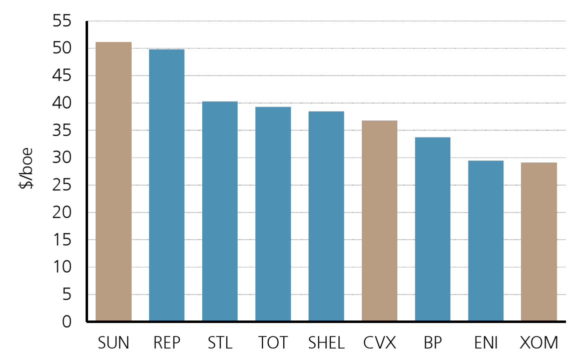
Global OilCo unit technical costs



Sector comment

- Given revenues implying price differentials at around 60% of Brent, then by implication pre-tax earnings break even at ~$50/bbl. Note given also that we highlight there is a significant spread between F&D costs and DD&A, the real break-even is probably higher

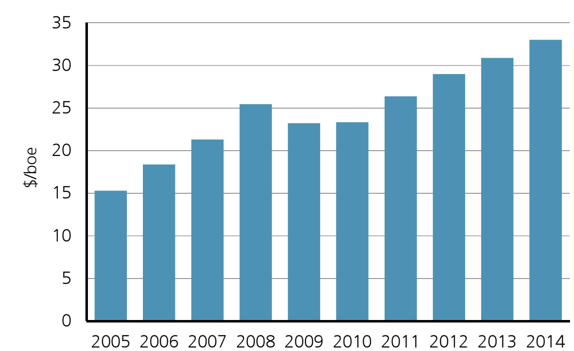
Global OilCo unit technical costs by company, 2014



$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 1 yr	Change 3 yr	Change 5 yr	NI $/boe 2014
Anadarko	10.41	9.23	9.20	10.76	12.25	13.34	20.64	24.70	30.73	27.90	27.30	27.99	29.59	26.07	27.52	6%	-2%	-1%	14.33
Apache	8.83	9.86	10.60	12.11	13.33	15.55	18.24	20.46	50.98	33.23	22.28	26.32	34.38	32.38	51.95	60%	97%	56%	0.44
Cabot	11.65	16.18	13.57	22.33	17.47	20.23	20.70	22.50	27.19	25.48	24.23	17.91	16.84	15.09	13.05	-14%	-27%	-49%	1.18
Chesapeake	6.77	9.23	10.56	11.34	13.02	15.51	19.17	20.79	20.35	14.88	13.25	13.59	16.08	15.33	15.09	-2%	11%	1%	9.97
CNOOC	7.30	7.48	8.70	9.48	10.44	10.61	12.18	15.13	17.30	20.29	22.39	28.26	32.66	43.51	40.69	-6%	44%	101%	24.20
Concho	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ConocoPhillips	10.39	11.21	12.55	12.15	13.57	13.98	17.48	21.34	23.84	23.73	24.75	27.90	29.79	32.99	36.50	11%	31%	54%	15.59
Continental	12.94	17.53	14.53	20.45	-	16.98	18.71	19.76	29.10	22.78	21.87	24.38	25.26	25.62	27.38	7%	12%	20%	14.72
Devon	10.41	11.62	10.61	12.95	14.91	16.58	17.88	21.45	20.19	15.03	14.75	15.94	18.45	18.73	21.27	14%	33%	41%	12.98
EOG	9.92	11.76	11.21	12.32	14.22	16.01	17.92	20.42	21.53	20.50	24.13	28.06	30.96	33.48	33.03	-1%	18%	61%	12.99
Hess	11.00	12.58	14.58	15.85	15.88	19.00	22.12	25.68	31.96	31.59	35.57	45.11	48.17	51.97	51.32	-1%	14%	62%	10.88
INPEX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lundin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marathon	12.13	11.55	12.40	11.16	14.35	17.09	16.94	19.84	23.55	25.32	31.85	37.35	34.63	37.44	40.76	9%	9%	61%	18.21
Murphy	42.44	14.76	15.20	16.42	16.51	22.21	27.72	31.84	34.88	28.45	32.01	35.73	38.70	45.34	43.72	-4%	22%	54%	14.42
Noble	13.92	16.36	15.05	17.43	16.25	17.55	20.21	20.37	20.47	19.18	21.13	23.26	28.97	28.86	29.41	2%	26%	53%	6.84
Occidental	9.16	11.95	11.01	11.73	13.29	16.45	20.99	24.63	23.70	24.06	24.17	28.37	30.83	33.66	35.05	4%	24%	46%	-4.01
ONGC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pioneer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PTTEP	-	-	-	-	-	-	-	11.04	13.30	16.21	15.68	19.57	21.96	25.24	32.52	29%	66%	101%	5.99
Range	-	-	13.17	14.15	14.26	15.49	16.68	18.94	21.68	20.95	16.70	19.83	18.38	18.77	17.26	-8%	-13%	-18%	8.97
Southwestern	9.90	10.58	10.96	10.87	11.35	12.82	17.55	20.05	18.30	14.65	13.91	13.62	13.49	12.46	12.97	4%	-5%	-11%	5.82
Tullow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Woodside	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Universe	**10.47**	**11.16**	**11.60**	**12.34**	**13.64**	**15.30**	**18.38**	**21.30**	**25.45**	**23.23**	**23.33**	**26.36**	**28.99**	**30.88**	**33.00**	**7%**	**25%**	**42%**	**9.65**

Note: Technical costs = Exploration expenses + DD&A + Production costs

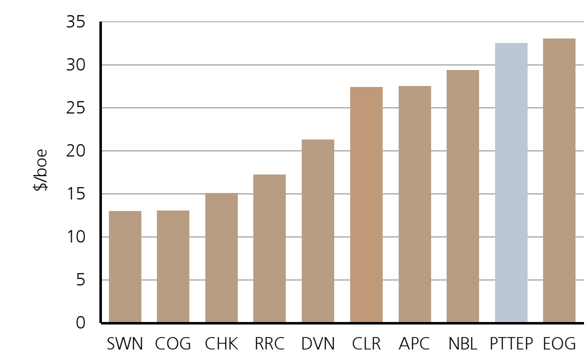
E&P Universe unit technical costs



Sector comment

- E&P technical costs are similar to those of the Integrated Majors, although as might be expected the US natural gas players record technical costs materially lower than the industry averages

Bottom 10 E&P unit technical costs by company, 2014

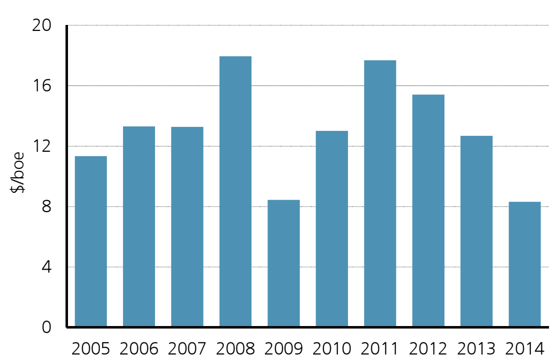


Net Income

$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 1 yr	Change 3 yr	Change 5 yr	2014 Rank
BG Group	5.43	6.10	5.65	6.19	7.97	11.29	11.17	12.07	15.40	7.21	8.64	10.31	9.50	9.91	9.20	-7%	-11%	28%	9
BP	7.64	6.49	3.83	6.59	9.76	14.26	16.20	15.69	21.38	12.32	18.50	19.00	17.76	12.27	6.44	-48%	-66%	-48%	12
Chevron	6.90	4.41	4.69	7.01	10.46	12.44	12.67	13.52	20.47	9.63	13.86	23.36	22.93	19.04	15.57	-18%	-33%	62%	5
Eni	7.87	5.43	5.00	5.81	8.61	11.97	14.57	13.72	15.40	7.86	11.52	16.14	15.34	14.57	9.36	-36%	-42%	19%	8
ExxonMobil	7.02	6.12	5.38	7.60	9.56	13.62	14.67	14.65	20.43	9.91	12.36	15.91	12.69	12.51	12.04	-4%	-24%	22%	7
GALP	-	-	-	-	-	-	-	-	-	-	2.14	15.32	24.51	13.56	3.35	-75%	-78%	-	16
Lukoil	8.41	4.96	5.33	3.81	6.72	7.83	7.53	9.73	12.79	8.67	9.31	10.76	11.48	10.72	5.58	-48%	-48%	-36%	14
MOL Group	-	7.58	8.80	7.06	6.89	14.89	15.20	11.55	15.81	9.55	16.61	21.68	21.81	15.81	7.71	-51%	-64%	-19%	10
Novatek	-	-	-	-	3.47	2.78	3.35	4.59	4.49	4.31	5.41	6.79	6.48	7.08	6.45	-9%	-5%	50%	11
OMV	9.62	7.67	6.35	5.57	6.83	11.92	14.64	16.99	23.26	11.10	12.08	20.32	18.89	19.52	12.67	-35%	-38%	14%	6
Petrobras	8.38	5.77	6.98	8.36	9.72	13.90	17.60	19.93	26.94	11.89	20.68	29.64	28.18	25.20	16.44	-35%	-45%	38%	4
Petro-Canada	6.29	6.06	4.16	8.14	10.29	14.09	17.05	14.38	24.89	-	-	-	-	-	-	-	-	-	-
PetroChina	-	8.03	7.94	10.04	13.03	19.52	21.34	23.89	29.00	15.89	21.18	26.91	24.16	21.57	19.41	-10%	-28%	22%	1
Repsol	6.78	4.39	3.03	3.33	3.25	3.63	5.56	4.05	3.87	2.93	3.97	5.32	13.92	12.39	1.97	-84%	-63%	-33%	18
RD/Shell	7.60	5.87	4.65	6.18	6.75	9.67	12.11	12.54	18.05	4.04	11.93	17.25	12.99	3.75	6.13	64%	-64%	52%	13
Rosneft	-	-	-	1.35	3.53	1.62	7.15	10.76	17.91	10.66	12.02	14.07	11.00	7.44	5.26	-29%	-63%	-51%	15
Sasol	-	-	-	-	-5.38	2.88	6.98	1.39	6.57	6.42	2.88	2.90	-13.76	-8.79	-23.17	164%	-899%	-461%	20
Sinopec	-	6.84	5.25	7.24	9.32	15.25	18.64	29.57	24.23	9.32	16.28	22.81	22.61	18.95	17.51	-8%	-23%	88%	3
Statoil	4.13	2.64	3.06	4.10	5.65	8.24	16.09	11.41	13.13	7.79	9.71	18.33	14.68	14.09	2.21	-84%	-88%	-72%	17
Suncor Energy (incl. Petro-Canada from 2009)	6.76	6.65	5.45	8.91	10.64	12.97	21.40	19.70	29.33	6.17	17.42	17.19	13.62	12.80	17.56	37%	2%	184%	2
TOTAL	5.78	4.85	4.87	6.79	8.41	11.01	12.38	12.30	16.06	9.16	12.53	16.06	14.35	12.77	1.05	-92%	-93%	-89%	19
Universe	**7.41**	**5.70**	**5.08**	**6.64**	**8.63**	**11.56**	**13.61**	**15.91**	**20.89**	**10.41**	**15.17**	**20.18**	**18.50**	**16.05**	**11.79**	**-27%**	**-42%**	**13%**	
Excluding emerging market	**6.88**	**5.40**	**4.53**	**6.39**	**8.31**	**11.36**	**13.28**	**13.30**	**17.96**	**8.46**	**12.86**	**17.15**	**15.44**	**12.49**	**8.51**	**-32%**	**-50%**	**0%**	
Global OilCo constituents	**6.89**	**5.38**	**4.51**	**6.40**	**8.32**	**11.35**	**13.32**	**13.28**	**17.95**	**8.46**	**13.04**	**17.36**	**15.62**	**12.47**	**8.39**	**-33%**	**-52%**	**-1%**	

Note: Upstream net income. Net income figures do not include associates income and are affected by allocation of midstream activities and one-off items

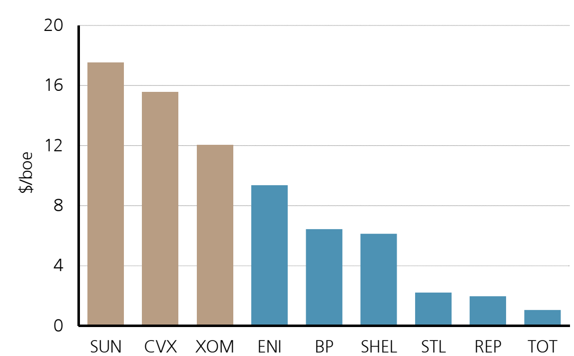
Global OilCo net income



Sector comment

- The absence of unit earnings leverage to the higher oil price is marked

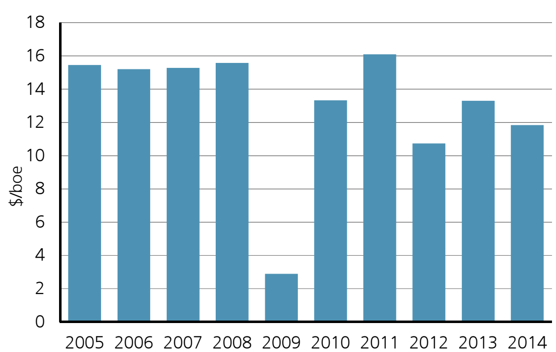
Global OilCo net income, 2014



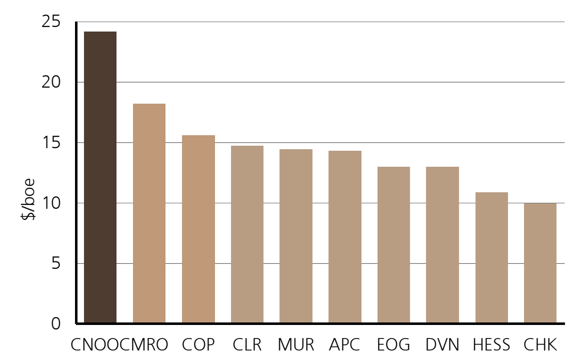
$/boe	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 1 yr	Change 3 yr	Change 5 yr	2014 Rank	Avg. 3yr	Avg. 5yr
Anadarko	8.84	0.22	5.58	8.60	10.99	18.09	17.72	22.74	18.60	1.30	5.69	13.07	5.57	7.86	14.33	82%	10%	1004%	6	11.38	7.76
Apache	8.90	6.86	5.47	8.76	11.06	16.33	13.68	15.22	2.58	0.89	15.34	18.41	9.70	12.24	0.44	-96%	-98%	-50%	16	7.82	11.39
Cabot	3.91	4.69	2.25	2.34	7.41	11.87	13.33	12.32	13.49	13.39	7.08	3.94	2.96	4.06	1.18	-71%	-70%	-91%	15	2.55	3.11
Chesapeake	8.08	11.98	4.34	9.87	11.07	15.07	22.93	15.27	8.32	-34.39	11.42	9.58	-2.67	7.80	9.97	28%	4%	-129%	10	5.20	6.95
CNOOC	14.25	8.51	8.82	10.63	13.77	20.28	25.20	22.94	30.41	19.45	25.19	34.78	30.24	22.27	24.20	9%	-30%	24%	1	25.25	26.93
Concho	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ConocoPhillips	6.41	4.67	3.83	6.25	8.81	13.60	11.96	11.46	16.98	5.14	15.14	14.40	15.30	17.67	15.59	-12%	8%	203%	3	16.18	15.63
Continental	11.72	5.41	5.80	6.00	-	19.99	19.81	22.11	29.01	7.78	18.09	23.13	19.56	22.64	14.72	-35%	-36%	89%	4	18.52	19.04
Devon	6.98	1.59	2.19	8.13	9.91	14.00	13.29	14.46	-11.02	-12.17	9.37	10.29	-0.43	2.62	12.98	395%	26%	-207%	8	5.01	6.87
EOG	7.06	6.39	3.13	8.21	9.72	15.54	11.67	10.33	17.72	1.92	2.46	5.39	4.16	14.58	12.99	-11%	141%	576%	7	10.89	8.53
Hess	6.44	5.58	-0.49	2.92	5.42	7.96	11.09	13.02	17.32	5.76	8.58	16.15	11.00	13.32	10.88	-18%	-33%	89%	9	11.69	11.88
INPEX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lundin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marathon	2.69	5.72	4.67	7.17	8.42	15.38	13.83	12.34	19.18	8.71	12.12	13.18	9.28	9.87	18.21	84%	38%	109%	2	12.38	12.47
Murphy	22.50	4.99	3.85	8.20	12.92	19.39	19.01	20.06	37.68	11.61	11.87	9.39	12.78	13.78	14.42	5%	54%	24%	5	13.70	12.57
Noble	5.86	4.24	0.80	2.36	7.67	14.64	13.33	15.08	15.63	0.61	9.53	7.61	11.51	11.89	6.84	-42%	-10%	1014%	12	9.93	9.45
Occidental	11.80	11.18	8.05	10.81	14.06	19.91	20.53	21.40	31.67	14.58	17.31	23.95	14.87	16.91	-4.01	-124%	-117%	-127%	17	9.37	14.36
ONGC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pioneer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PTTEP	-	-	-	-	-	-	-	10.90	12.96	7.68	12.67	16.13	19.15	19.75	5.99	-70%	-63%	-22%	13	14.62	14.51
Range	-	-	2.82	3.20	3.53	7.63	11.55	8.52	14.92	-2.03	2.94	1.27	0.28	2.02	8.97	343%	608%	-542%	11	4.39	2.45
Southwestern	5.39	7.84	4.57	9.39	13.02	17.00	14.50	13.67	17.12	-0.65	8.62	7.06	-7.97	5.70	5.82	2%	-18%	-996%	14	1.87	3.71
Tullow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Woodside	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Universe	**7.86**	**5.34**	**4.35**	**7.56**	**10.12**	**15.46**	**15.21**	**15.28**	**15.58**	**2.89**	**13.33**	**16.10**	**10.74**	**13.30**	**11.84**	**-11%**	**-26%**	**310%**		**9.74**	**10.33**

Note: Upstream net income. Net income figures do not include associates income and are affected by allocation of midstream activities and one-off items

E&P Universe net income



Top 10 E&P net income by company, 2014



Results of oil and gas producing activities - $/boe

2014	BG	BP	CVX	ENI	XOM	GALP	LUK	MOL	NVT	OMV	PBR	PCH	REP	RDS	ROSN	SAS	SINO	STL	SUN	TOT	Universe	% sales
Sales	52.69	58.84	67.20	61.84	60.41	96.42	47.20	48.67	17.89	65.22	77.43	67.00	57.65	67.05	33.05	21.10	76.21	67.45	85.43	59.14	68.33	100%
Production costs	(8.37)	(12.27)	(17.14)	(8.45)	(15.30)	(12.24)	(5.53)	(8.20)	(0.57)	(15.69)	(32.30)	(13.96)	(13.26)	(16.25)	(3.94)	(5.94)	(18.29)	(8.33)	33.46	(9.82)	(15.07)	-22%
Exploration expense	(3.40)	(5.07)	(2.43)	(3.68)	(1.56)	(15.21)	(1.29)	(2.04)	(0.01)	(5.41)	(3.46)	(2.44)	(20.52)	(4.57)	(0.29)	(1.52)	(3.97)	(7.62)	1.70	(3.39)	(3.34)	-5%
DD&A	(10.99)	(16.37)	(17.24)	(17.34)	(12.21)	(22.21)	(8.00)	(25.99)	(1.12)	(18.48)	(9.69)	(13.12)	(16.04)	(17.66)	(5.88)	(10.72)	(18.57)	(24.35)	17.74	(26.11)	(15.94)	-23%
Other	(13.21)	(16.54)	0.11	(7.33)	(4.82)	(18.59)	(25.37)	(2.92)	(8.13)	(6.99)	(6.29)	(13.07)	(0.40)	(7.05)	(16.43)	(22.60)	(11.57)	(3.77)	(113.45)	(4.32)	(12.09)	-18%
Pre-tax	**16.72**	**8.59**	**30.50**	**25.05**	**26.52**	**28.17**	**7.01**	**9.52**	**8.06**	**18.64**	**25.69**	**24.41**	**7.41**	**21.53**	**6.51**	**(19.67)**	**23.82**	**23.37**	**24.88**	**15.51**	**21.89**	**32%**
Tax	(7.53)	(2.15)	(14.93)	(15.69)	(14.48)	(24.81)	(1.43)	(1.82)	(1.61)	(5.97)	(9.25)	(5.00)	(5.44)	(15.40)	(1.24)	(3.50)	(6.31)	(21.16)	(7.33)	(14.46)	(10.10)	-15%
Net Income	**9.20**	**6.44**	**15.57**	**9.36**	**12.04**	**3.35**	**5.58**	**7.71**	**6.45**	**12.67**	**16.44**	**19.41**	**1.97**	**6.13**	**5.26**	**(23.17)**	**17.51**	**2.21**	**17.56**	**1.05**	**11.79**	**17%**

2013	BG	BP	CVX	ENI	XOM	GALP	LUK	MOL	NVT	OMV	PBR	PCH	REP	RDS	ROSN	SAS	SINO	STL	SUN	TOT	Universe	% sales
Sales	50.85	67.04	74.26	68.76	64.89	112.02	52.87	54.86	20.11	65.64	85.56	70.66	71.80	76.33	38.43	18.14	79.71	77.84	86.84	68.01	74.93	100%
Production costs	(7.06)	(12.73)	(16.52)	(8.30)	(14.80)	(13.40)	(5.36)	(8.84)	(0.77)	(13.22)	(33.27)	(13.48)	(14.74)	(15.37)	(4.14)	(4.82)	(18.99)	(8.77)	33.64	(8.83)	(14.83)	-20%
Exploration expense	(3.08)	(4.84)	(2.26)	(4.04)	(1.85)	(17.17)	(0.74)	(1.72)	(0.04)	(5.10)	(3.51)	(2.91)	(10.93)	(6.01)	(0.34)	(4.56)	(4.58)	(4.93)	1.52	(3.66)	(3.33)	-4%
DD&A	(11.30)	(14.53)	(15.12)	(13.94)	(12.23)	(32.14)	(4.57)	(26.52)	(1.04)	(14.42)	(10.34)	(11.98)	(14.66)	(17.95)	(6.67)	(12.49)	(16.98)	(17.57)	20.00	(14.98)	(14.01)	-19%
Other	(9.11)	(14.10)	(1.96)	(7.67)	(5.55)	(19.17)	(29.01)	0.54	(9.41)	(5.25)	(0.66)	(15.24)	(0.86)	(13.83)	(17.89)	(1.50)	(12.88)	(4.52)	(119.77)	(4.71)	(12.98)	-17%
Pre-tax	**20.30**	**20.84**	**38.41**	**34.81**	**30.47**	**30.13**	**13.19**	**18.32**	**8.84**	**27.66**	**37.79**	**27.05**	**30.61**	**23.17**	**9.39**	**(5.22)**	**26.27**	**42.05**	**22.23**	**35.83**	**29.78**	**40%**
Tax	(10.39)	(8.57)	(19.37)	(20.24)	(17.96)	(16.58)	(2.47)	(2.50)	(1.77)	(8.14)	(12.58)	(5.48)	(18.22)	(19.43)	(1.95)	(3.57)	(7.32)	(27.96)	(9.44)	(23.06)	(13.73)	-18%
Net Income	**9.91**	**12.27**	**19.04**	**14.57**	**12.51**	**13.56**	**10.72**	**15.81**	**7.08**	**19.52**	**25.20**	**21.57**	**12.39**	**3.75**	**7.44**	**(8.79)**	**18.95**	**14.09**	**12.80**	**12.77**	**16.05**	**21%**

2012	BG	BP	CVX	ENI	XOM	GALP	LUK	MOL	NVT	OMV	PBR	PCH	REP	RDS	ROSN	SAS	SINO	STL	SUN	TOT	Universe	% sales
Sales	47.64	66.35	76.27	70.31	64.07	117.43	54.37	54.84	16.63	69.11	90.68	72.04	78.37	78.62	43.88	20.93	83.65	77.93	86.15	71.14	74.35	100%
Production costs	(6.05)	(12.17)	(14.96)	(7.06)	(12.51)	(15.38)	(4.87)	(7.03)	(0.68)	(12.08)	(32.47)	(11.98)	(15.76)	(13.75)	(2.91)	(4.51)	(17.45)	(7.99)	33.27	(7.86)	(13.28)	-18%
Exploration expense	(2.84)	(2.00)	(2.07)	(3.85)	(1.64)	(10.09)	(0.46)	(1.36)	(0.18)	(4.63)	(4.50)	(2.80)	(11.24)	(3.63)	(0.80)	(3.68)	(5.71)	(4.71)	1.54	(3.00)	(2.93)	-4%
DD&A	(9.05)	(13.08)	(13.55)	(13.86)	(10.85)	(29.31)	(3.87)	(14.46)	(0.95)	(12.69)	(8.35)	(11.03)	(13.10)	(12.29)	(5.79)	(11.70)	(14.81)	(14.58)	19.01	(15.58)	(11.87)	-16%
Other	(8.43)	(10.40)	0.73	(6.63)	(6.19)	(14.68)	(31.10)	(3.51)	(6.71)	(5.98)	(2.24)	(16.05)	(0.91)	(8.88)	(20.71)	(9.82)	(14.63)	(3.33)	(119.13)	(4.88)	(11.35)	-15%
Pre-tax	**21.27**	**28.70**	**46.42**	**38.90**	**32.88**	**47.98**	**14.07**	**28.48**	**8.11**	**33.73**	**43.12**	**30.18**	**37.35**	**40.08**	**13.67**	**(8.78)**	**31.05**	**47.32**	**20.83**	**39.82**	**34.92**	**47%**
Tax	(11.77)	(10.95)	(23.49)	(23.57)	(20.19)	(23.47)	(2.58)	(6.66)	(1.62)	(14.84)	(14.94)	(6.02)	(23.43)	(27.09)	(2.67)	(4.98)	(8.44)	(32.64)	(7.21)	(25.47)	(16.42)	-22%
Net Income	**9.50**	**17.76**	**22.93**	**15.34**	**12.69**	**24.51**	**11.48**	**21.81**	**6.48**	**18.89**	**28.18**	**24.16**	**13.92**	**12.99**	**11.00**	**(13.76)**	**22.61**	**14.68**	**13.62**	**14.35**	**18.50**	**25%**

3 year average	BG	BP	CVX	ENI	XOM	GALP	LUK	MOL	NVT	OMV	PBR	PCH	REP	RDS	ROSN	SAS	SINO	STL	SUN	TOT	Universe	% sales
Sales	50.40	64.08	72.58	66.97	63.12	108.63	51.48	52.79	18.21	66.65	84.56	69.90	69.27	74.00	38.46	20.06	79.86	74.41	86.14	66.10	72.54	100%
Production costs	(7.16)	(12.39)	(16.21)	(7.94)	(14.20)	(13.67)	(5.26)	(8.02)	(0.68)	(13.66)	(32.68)	(13.14)	(14.59)	(15.12)	(3.66)	(5.09)	(18.24)	(8.36)	33.46	(8.84)	(14.39)	-20%
Exploration expense	(3.11)	(3.97)	(2.25)	(3.85)	(1.68)	(14.16)	(0.83)	(1.71)	(0.08)	(5.05)	(3.82)	(2.71)	(14.23)	(4.74)	(0.48)	(3.25)	(4.75)	(5.76)	1.58	(3.35)	(3.20)	-4%
DD&A	(10.45)	(14.66)	(15.30)	(15.05)	(11.76)	(27.89)	(5.48)	(22.33)	(1.04)	(15.19)	(9.46)	(12.04)	(14.60)	(15.96)	(6.11)	(11.64)	(16.79)	(18.83)	18.91	(18.89)	(13.94)	-19%
Other	(10.25)	(13.68)	(0.37)	(7.21)	(5.52)	(17.48)	(28.49)	(1.96)	(8.08)	(6.07)	(3.06)	(14.79)	(0.72)	(9.92)	(18.34)	(11.31)	(13.03)	(3.88)	(117.45)	(4.64)	(12.14)	-17%
Pre-tax	**19.43**	**19.38**	**38.44**	**32.92**	**29.96**	**35.43**	**11.42**	**18.77**	**8.34**	**26.68**	**35.53**	**27.21**	**25.13**	**28.26**	**9.85**	**(11.22)**	**27.05**	**37.58**	**22.65**	**30.39**	**28.86**	**40%**
Tax	(9.90)	(7.22)	(19.26)	(19.83)	(17.54)	(21.62)	(2.16)	(3.66)	(1.67)	(9.65)	(12.26)	(5.50)	(15.70)	(20.64)	(1.95)	(4.02)	(7.36)	(27.25)	(7.99)	(21.00)	(13.42)	-18%
Net Income	**9.54**	**12.16**	**19.18**	**13.09**	**12.42**	**13.81**	**9.26**	**15.11**	**6.67**	**17.03**	**23.27**	**21.71**	**9.43**	**7.62**	**7.90**	**(15.24)**	**19.69**	**10.33**	**14.66**	**9.39**	**15.45**	**21%**

Note: Upstream net income. Net income figures do not include associates income and are affected by allocation of midstream activities and one-off items

2014	APC	APA	COG	CHK	CNOOC	COP	CLR	DVN	EOG	HESS	MRO	MUR	NBL	OXY	PTTEP	SWN	Universe	% sales
Sales	54.59	57.57	24.52	31.72	87.27	68.75	66.11	40.31	57.72	72.55	72.83	65.70	45.10	63.76	61.61	22.37	59.05	1.00
Production costs	(8.90)	(10.38)	(5.58)	(4.68)	(12.85)	(16.13)	(5.54)	(9.49)	(14.25)	(18.07)	(18.03)	(14.50)	(8.76)	(17.40)	(10.15)	(6.06)	(11.97)	(0.20)
Exploration exp.	(5.24)	-	(0.32)	-	(4.65)	(3.99)	(0.79)	-	(1.06)	(6.89)	(4.77)	(5.32)	(4.55)	(0.69)	(2.59)	-	(2.71)	(0.05)
DD&A	(13.38)	(40.82)	(7.14)	(10.40)	(23.19)	(16.38)	(21.05)	(11.78)	(17.71)	(26.35)	(17.96)	(23.89)	(16.09)	(16.96)	(19.78)	(6.91)	(18.26)	(0.31)
Other	(6.43)	(4.61)	(11.11)	(0.90)	(13.71)	(8.37)	(15.20)	1.12	(3.39)	(2.76)	(1.68)	(4.11)	(4.57)	(29.18)	(13.60)	-	(7.64)	(0.13)
Pre-tax	**20.65**	**1.76**	**0.37**	**15.73**	**32.87**	**23.89**	**23.52**	**20.17**	**21.30**	**18.48**	**30.39**	**17.88**	**11.12**	**(0.47)**	**15.49**	**9.39**	**18.45**	**0.31**
Tax	(6.32)	(1.32)	0.81	(5.76)	(8.67)	(8.31)	(8.80)	(7.19)	(8.31)	(7.60)	(12.18)	(3.46)	(4.28)	(3.53)	(9.49)	(3.57)	(6.61)	(0.11)
Net Income	**14.33**	**0.44**	**1.18**	**9.97**	**24.20**	**15.59**	**14.72**	**12.98**	**12.99**	**10.88**	**18.21**	**14.42**	**6.84**	**(4.01)**	**5.99**	**5.82**	**11.84**	**0.20**

2013	APC	APA	COG	CHK	CNOOC	COP	CLR	DVN	EOG	HESS	MRO	MUR	NBL	OXY	PTTEP	SWN	Universe	% sales
Sales	46.53	57.30	25.35	28.84	94.27	73.37	72.70	33.73	57.52	80.17	68.65	71.14	48.46	67.70	64.03	21.96	60.34	1.02
Production costs	(8.63)	(10.31)	(5.38)	(4.74)	(12.99)	(16.28)	(5.69)	(8.98)	(13.61)	(19.96)	(16.22)	(17.95)	(9.01)	(16.50)	(9.92)	(5.74)	(12.04)	(0.20)
Exploration exp.	(4.68)	-	(0.26)	-	(7.05)	(2.46)	(0.70)	-	(1.26)	(8.27)	(5.59)	(5.83)	(4.15)	(0.63)	(1.47)	-	(2.76)	(0.05)
DD&A	(12.76)	(21.21)	(9.45)	(10.59)	(23.47)	(14.26)	(19.23)	(9.76)	(18.61)	(23.74)	(15.62)	(21.56)	(15.70)	(16.53)	(13.85)	(6.72)	(16.00)	(0.27)
Other	(6.09)	(4.63)	(3.21)	(0.94)	(17.66)	(10.05)	(11.14)	(10.71)	(1.53)	(3.02)	(1.72)	(3.23)	(0.86)	(5.20)	(6.72)	-	(6.91)	(0.12)
Pre-tax	**14.37**	**21.15**	**7.05**	**12.58**	**33.11**	**30.33**	**35.94**	**4.29**	**22.51**	**25.18**	**29.49**	**22.56**	**18.74**	**28.84**	**32.07**	**9.50**	**22.64**	**0.38**
Tax	(6.52)	(8.90)	(2.99)	(4.78)	(10.84)	(12.67)	(13.30)	(1.67)	(7.93)	(11.86)	(19.62)	(8.79)	(6.85)	(11.93)	(12.32)	(3.80)	(9.34)	(0.16)
Net Income	**7.86**	**12.24**	**4.06**	**7.80**	**22.27**	**17.67**	**22.64**	**2.62**	**14.58**	**13.32**	**9.87**	**13.78**	**11.89**	**16.91**	**19.75**	**5.70**	**13.30**	**0.23**

2012	APC	APA	COG	CHK	CNOOC	COP	CLR	DVN	EOG	HESS	MRO	MUR	NBL	OXY	PTTEP	SWN	Universe	% sales
Sales	46.07	57.64	27.02	26.48	97.65	74.35	66.62	28.69	46.77	72.30	72.15	65.09	47.51	66.41	59.83	20.85	59.02	1.00
Production costs	(8.46)	(9.77)	(5.87)	(5.50)	(11.25)	(14.09)	(5.47)	(8.32)	(12.10)	(18.27)	(14.43)	(15.75)	(8.73)	(16.39)	(7.87)	(5.37)	(11.21)	(0.19)
Exploration exp.	(7.27)	-	(0.84)	-	(4.49)	(2.84)	(0.66)	-	(1.17)	(7.10)	(4.11)	(3.55)	(4.90)	(0.87)	(1.90)	-	(2.63)	(0.04)
DD&A	(13.86)	(23.81)	(10.13)	(10.58)	(16.91)	(12.86)	(19.13)	(10.13)	(17.68)	(22.80)	(16.09)	(19.41)	(15.34)	(13.57)	(12.19)	(8.13)	(15.07)	(0.26)
Other	(5.77)	(4.58)	(4.85)	(14.78)	(22.23)	(13.53)	(9.82)	(11.05)	(7.43)	(2.08)	(1.53)	(5.06)	(1.16)	(9.72)	(5.68)	(20.60)	(10.17)	(0.17)
Pre-tax	**10.71**	**19.48**	**5.34**	**(4.37)**	**42.76**	**31.02**	**31.54**	**(0.81)**	**8.38**	**22.05**	**35.99**	**21.33**	**17.37**	**25.86**	**32.19**	**(13.24)**	**19.94**	**0.34**
Tax	(5.14)	(9.78)	(2.38)	1.70	(12.52)	(15.72)	(11.99)	0.39	(4.23)	(11.04)	(26.71)	(8.55)	(5.87)	(10.99)	(13.04)	5.28	(9.20)	(0.16)
Net Income	**5.57**	**9.70**	**2.96**	**(2.67)**	**30.24**	**15.30**	**19.56**	**(0.43)**	**4.16**	**11.00**	**9.28**	**12.78**	**11.51**	**14.87**	**19.15**	**(7.97)**	**10.74**	**0.18**

3 year average	APC	APA	COG	CHK	CNOOC	COP	CLR	DVN	EOG	HESS	MRO	MUR	NBL	OXY	PTTEP	SWN	Universe	% sales
Sales	46.98	56.65	31.34	29.82	87.53	67.76	66.52	31.69	41.66	67.13	67.72	61.44	42.45	63.58	49.64	24.69	56.50	1.00
Production costs	(8.59)	(9.87)	(5.72)	(5.36)	(9.40)	(12.45)	(5.83)	(7.80)	(11.00)	(15.90)	(14.28)	(14.71)	(8.24)	(15.03)	(6.64)	(5.53)	(10.47)	(0.19)
Exploration exp.	(5.27)	-	(1.32)	-	(3.26)	(2.26)	(0.90)	-	(1.47)	(7.11)	(3.95)	(3.98)	(3.61)	(0.95)	(1.56)	-	(2.22)	(0.04)
DD&A	(14.44)	(17.19)	(12.61)	(8.95)	(15.11)	(12.77)	(17.10)	(8.58)	(15.24)	(19.94)	(16.37)	(16.80)	(12.61)	(11.80)	(10.87)	(8.15)	(13.49)	(0.24)
Other	(7.24)	(3.84)	(5.37)	(5.55)	(18.84)	(10.63)	(10.00)	(5.69)	(6.36)	(2.05)	(1.22)	(5.47)	(4.11)	(4.94)	(4.19)	(6.87)	(7.47)	(0.13)
Pre-tax	**11.44**	**25.76**	**8.10**	**9.97**	**40.92**	**29.64**	**32.69**	**9.62**	**7.59**	**22.13**	**31.90**	**20.49**	**13.89**	**30.84**	**26.37**	**4.15**	**22.86**	**0.41**
Tax	(3.34)	(11.28)	(3.44)	(3.86)	(10.85)	(14.69)	(12.44)	(3.21)	(3.58)	(10.22)	(20.37)	(9.15)	(4.34)	(12.13)	(10.39)	(1.58)	(9.47)	(0.17)
Net Income	**8.11**	**14.48**	**4.66**	**6.11**	**30.07**	**14.95**	**20.26**	**6.41**	**4.00**	**11.91**	**11.52**	**11.35**	**9.55**	**18.71**	**15.98**	**2.57**	**13.39**	**0.24**

Note: Upstream net income. Net income figures do not include associates income and are affected by allocation of midstream activities and one-off items

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Company analysis

Note: All sources for figures are company reports and UBS estimates unless otherwise specifically noted. Sources for index constituents and holders are Bloomberg, Thomson Datastream and/or company disclosure. Pricing data is as of 4 September 2015.

Anadarko Petroleum

Investment Case

APC should deliver average cash flow per debt-adjusted share growth over the next several years and has a huge inventory of unbooked deepwater discoveries and unconventional US resources enabling ~5-7% growth for years after oil prices recover to more normalized levels. We also believe APC has a more diverse portfolio and sophisticated capital allocation process that should enable the company to better manage the current oil price downturn. APC trades at 0.95x NAV assuming current oil and gas futures strip prices, below the global peer average of 1.3x. Notably, APC has several exploration catalysts and potential asset monetisations in 2015-16 to help close the valuation gap, and we continue to view it as a potential acquisition target for one of the growth constrained Majors.

Financial and Operational Outlook

APC has reduced its maintenance capex from $3.0 billion to $2.7-$2.9 billion, which excludes spending on midstream, exploration, and mega-projects, and expects to operate within cash flow plus asset sale proceeds in 2016. We estimate 2016E capex of $5.0 billion (below consensus of $5.8 billion) would enable 4% oil growth, flattish overall production, and lead to a $0.8 billion free cash flow deficit at the futures strip to be funded by WES dropdowns, WGP unit sales, and divestiture proceeds.

Upside Scenario

Our upside case assumes APC is acquired. In an environment where Super-Majors have under-invested in both global exploration and US unconventional shales, APC offers a one-stop solution. With most acquisitions of E&Ps historically done at NAV, we should note that our NAV estimate for APC is ~$99/share, implying ~40% upside from current levels.

Downside Scenario

Our downside case scenario assumes APC fails to meet its short- and long-term production targets, does not have exploration success, and its current free cash flow deficit widens. Under these assumptions and assuming current strip prices, we could see APC declining to 0.7x NAV estimate under current strip prices, implying a stock price move to ~$50/share.

Catalysts

2015: exploration and appraisal results from the GoM, offshore Cote d'Ivoire, Kenya, and Colombia.

2015: potential monetization of non-producing assets to close price/NAV gap.

Valuation

APC trades at a discount to peers on price/NAV despite superior long-term growth visibility and above-average debt-adjusted metrics. Our $82 price target assumes 0.80x NAV, or 7.8x normalized 2015E DACF.

Anadarko Petroleum Price target: $82 Upside: 20% Buy

Share data				
Mkt cap ($ bn)	34.7	% of S&P 500		0.25%
Mkt cap ($ bn)	34.7	Daily trading volume (m)		1.34
Price ($)	68.3	Free float		99.5%
12m high	109.87	Major shareholders	The Vanguard Group	6.0%
12m low	63.99		ClearBridge	4.8%
RIC code	APC.N		SSgA Funds	4.5%
Bloomberg code	APC US			

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	781	842	834	825	861	901	945
Growth	7%	8%	-1%	-1%	4%	5%	5%
Oil production (000 bbl/d)	339	411	442	452	486	514	544
Growth	7%	21%	8%	2%	8%	6%	6%
Gas production (000 mcf/d)	2652	2589	2351	2240	2246	2325	2406
Growth	6%	-2%	-9%	-5%	0%	4%	3%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**98.02**	**92.89**	**49.00**	**52.50**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	13,923	15,543	8,709	9,393	12,157	13,833	15,325
Other Revenues	184	78	295	320	320	320	320
Total Revenues	**14,107**	**15,621**	**9,004**	**9,713**	**12,477**	**14,153**	**15,645**
Costs	(3,191)	(3,603)	(2,775)	(2,796)	(3,020)	(3,236)	(3,449)
Admin, G&A	(1,090)	(1,316)	(1,259)	(1,194)	(1,187)	(1,204)	(1,262)
Royalties	0	0	(109)	(236)	(287)	(308)	(328)
DD&A	(3,927)	(4,555)	(4,706)	(4,755)	(4,953)	(5,185)	(5,438)
Exploration expense	(1,329)	(1,411)	(922)	(995)	(1,068)	(1,151)	(1,244)
Adj Operating Income	**4,570**	**4,736**	**(768)**	**(263)**	**1,962**	**3,069**	**3,924**
Other income & Associates	149	176	95	187	226	236	234
Net interest	(686)	(753)	(817)	(800)	(800)	(800)	(800)
Pre-tax profit	**4,033**	**4,159**	**(1,490)**	**(876)**	**1,387**	**2,506**	**3,358**
Tax	(1,926)	(1,878)	437	351	(578)	(1,060)	(1,387)
Minorities	(92)	(187)	(169)	(190)	(240)	(250)	(240)
Adj Net income	**2,015**	**2,094**	**(1,222)**	**(716)**	**569**	**1,196**	**1,731**
Special items	0	0	0	0	0	0	0
Rep Net Income	**2,015**	**2,094**	**(1,222)**	**(716)**	**569**	**1,196**	**1,731**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	504	507	509	512	516	520	524
EPS	$4.00	$4.13	($2.40)	($1.40)	$1.10	$2.30	$3.30
Adj EPS	$4.00	$4.13	($2.40)	($1.40)	$1.10	$2.30	$3.30
Adj CEPS	$14.62	$17.83	$8.70	$8.40	$12.30	$14.45	$16.35
DPS (net)	$0.54	$1.00	$1.09	$1.13	$1.18	$1.23	$1.28
Pay out ratio (EPS)	14%	24%	NA	-81%	107%	53%	39%
Pay out ratio (Adj CEPS)	4%	6%	12%	13%	10%	9%	8%
Tax rate	48%	45%	29%	40%	42%	42%	41%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	941	(1,563)	(3,988)	(716)	569	1,196	1,731
DD&A	3,927	4,550	4,706	4,755	4,953	5,185	5,438
Exploration	864	1,245	1,476	649	696	751	811
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	2,181	(255)	2,091	(174)	335	596	775
Working capital/other	975	4,489	(5,782)	0	0	0	0
Net cashflow from ops	**8,888**	**8,466**	**(1,496)**	**4,514**	**6,553**	**7,727**	**8,755**
Disposals	567	4,968	995	0	0	0	0
Shares issued	146	121	83	116	116	116	116
Sources	**9,601**	**13,555**	**(419)**	**4,629**	**6,669**	**7,843**	**8,870**
Capex	(7,721)	(9,508)	(6,300)	(5,700)	(6,950)	(8,200)	(8,575)
Acquisitions	(473)	(1,527)	(3)	0	0	0	0
Dividends	(274)	(505)	(552)	(580)	(609)	(639)	(671)
Shares purchased	(54)	(45)	(37)	0	0	0	0
Other	411	368	432	0	0	0	0
Applications	**(8,111)**	**(11,217)**	**(6,460)**	**(6,280)**	**(7,559)**	**(8,839)**	**(9,246)**
Cash surplus/(deficit)	979	2,217	(7,077)	(1,650)	(890)	(996)	(375)
FX/other	(2,171)	(4,662)	4,947	0	0	0	0
Decrease in net debt	**(1,192)**	**(2,445)**	**(2,130)**	**(1,650)**	**(890)**	**(996)**	**(375)**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	11,660	14,105	16,235	17,885	18,775	19,771	20,146
Equity	23,650	22,318	18,287	17,108	17,184	21,813	23,160
Capital employed	35,310	36,423	34,522	34,993	35,958	41,584	43,307
Net debt/equity	49%	63%	89%	105%	109%	91%	87%
Net debt/Net debt & Equity	33%	39%	47%	51%	52%	48%	47%
NAV	70.1	71.9	67.9	68.4	69.7	80.0	82.7
ROAE	12.3%	14.9%	-7.8%	-5.1%	5.2%	10.1%	13.5%
ROACE	8.8%	10.3%	-2.8%	-1.3%	4.1%	6.7%	8.7%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	43,763	47,892	34,703	34,922	35,195	35,468	35,742
Core net debt (inc. associates)	11,064	12,883	15,170	17,060	18,330	19,273	19,959
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**54,827**	**60,774**	**49,873**	**51,981**	**53,525**	**54,741**	**55,701**
Net income before minorities	2,107	2,281	(1,053)	(526)	809	1,446	1,971
DD&A + exploration	5,256	5,966	5,629	5,750	6,020	6,336	6,681
Other group non-cash items	6	784	(151)	(926)	(484)	(270)	1,397
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	493	652	776	653	651	647	439
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**7,862**	**9,683**	**5,201**	**4,951**	**6,996**	**8,159**	**10,489**
EV/DACF	**7.0x**	**6.3x**	**9.6x**	**10.5x**	**7.7x**	**6.7x**	**5.3x**

Apache

Investment Case

We believe APA's ~65% YoY cut to Onshore North America spending leaves its production trajectory at risk of declining in 2016. APA's 2015 guidance for 1-2% YoY growth implies production declines in 2H15 despite a modest activity ramp-up from 2Q. And international volumes should decline 5% in 2H15 from 2Q15. And with APA focused on keeping spending within cash flow, our model implies the need for further improvement in capital efficiency in order for 2016 production to remain steady with the 2H15 exit. We rate APA a Neutral with a price target of $46.

Financial and Operational Outlook

APA expects to have strong production momentum as it exits 2015 and believes that it will have the flexibility to live within cash flow next year, while maintaining relatively stable YoY production levels. However, with quarterly capex in 2H15 of $1 billion (including GPM and capitalized G&A), APA is guiding to a 5% decline from 2Q to ~535 MBoed. Thus, APA's informal 2016 guidance seems aggressive as we estimate it would require a reduction in capex to $3.2 billion (vs. $3.75 billion this year) and production to exit 2016 at 585 MBoed (up ~8% YoY from 4Q15E).

Upside Scenario

Our upside scenario assumes APA delivers better-than-expected volume growth in the near-term and delivers long-term production per debt-adjusted growth outlook above the peer average. Under these assumptions, we could see APA appreciating to 6.0x normalized 2016E DACF, 1.0x above its historical multiple and more in line with higher growth global peers, implying upside to ~$63/share.

Downside Scenario

Under our downside scenario, APA misses near-term production expectations and begins to see declining volumes in 2016, leaving debt adjusted growth well below peer averages, and the political uncertainty in Egypt takes a turn for the worse resulting in nationalization of APA’s assets. Under this scenario, we see APA’s multiple compressing to 4.0x normalized 2015E DACF, near the low-growth peer target multiple and implying downside to ~$37/share.

Catalysts

2015 quarterly updates: actual production/capex vs. guidance.

Valuation

APA now trades at a modest discount to peers. Our $46 price target assumes 0.75 P/NAV (in line with historical average), and implies 4.7x normalized 2016E DACF.

Apache Corp. Price target: $46 Upside: 8% Neutral

Share data			
Mkt cap ($ bn)	16.1	% of S&P 500	0.32%
Mkt cap ($ bn)	16.1	Daily trading volume (m)	1.07
Price ($)	42.5	Free float	99.0%
12m high	99.53	Major shareholders Dodge & Cox	8.0%
12m low	38.90	T. Rowe Price	5.8%
RIC code	APA.N	The Vanguard Group	5.7%
Bloomberg code	APA US		

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	760	647	563	542	557	579	603
Growth	-2%	-15%	-13%	-4%	3%	4%	4%
Oil production (000 bbl/d)	410	387	362	354	368	388	409
Growth	4%	-5%	-7%	-2%	4%	5%	6%
Gas production (000 mcf/d)	2097	1554	1208	1130	1138	1150	1162
Growth	-9%	-26%	-22%	-6%	1%	1%	1%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**98.02**	**92.89**	**49.00**	**52.50**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	16,368	13,726	6,892	7,083	8,978	9,885	10,947
Other Revenues	44	86	39	5	5	10	15
Total Revenues	**16,412**	**13,812**	**6,931**	**7,088**	**8,983**	**9,895**	**10,962**
Costs	(3,803)	(3,042)	(2,171)	(2,140)	(2,225)	(2,322)	(2,429)
Admin, G&A	(536)	(466)	(391)	(393)	(428)	(432)	(437)
Royalties	(382)	(308)	(200)	(208)	(248)	(458)	(486)
DD&A	(5,674)	(5,338)	(4,305)	(4,127)	(4,364)	(4,532)	(4,715)
Exploration expense	0	0	0	0	0	0	0
Adj Operating Income	**6,017**	**4,658**	**(136)**	**221**	**1,718**	**2,151**	**2,896**
Other income & Associates	0	0	0	0	0	0	0
Net interest	(158)	(130)	(224)	(221)	(221)	(221)	(221)
Pre-tax profit	**5,859**	**4,528**	**(360)**	**0**	**1,497**	**1,930**	**2,675**
Tax	(2,587)	(1,902)	90	(0)	(554)	(706)	(998)
Minorities	0	(343)	(166)	(268)	(310)	(334)	(339)
Adj Net income	**3,272**	**2,283**	**(436)**	**(268)**	**633**	**889**	**1,338**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	405	385	379	382	384	386	388
EPS	$8.27	$5.94	($1.15)	($0.70)	$1.66	$2.32	$3.47
Adj EPS	$8.09	$5.93	($1.15)	($0.70)	$1.65	$2.30	$3.45
Adj CEPS	$22.36	$18.94	$7.00	$7.75	$11.00	$12.10	$13.90
DPS (net)	$0.91	$0.95	$0.97	$1.01	$1.06	$1.11	$1.16
Pay out ratio (EPS)	11%	16%	-84%	-145%	64%	48%	33%
Pay out ratio (Adj CEPS)	4%	5%	14%	13%	10%	9%	8%
Tax rate	44%	42%	25%	37%	37%	37%	37%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	2,288	(5,060)	(10,579)	(268)	633	889	1,338
DD&A	6,700	10,158	17,106	4,027	4,264	4,432	4,615
Exploration	0	0	0	0	0	0	0
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	766	3,581	(3,410)	115	278	307	407
Working capital/other	81	(218)	311	0	0	0	0
Net cashflow from ops	**9,835**	**8,461**	**3,428**	**3,874**	**5,175**	**5,628**	**6,361**
Disposals	4,405	2,622	5,308	0	0	0	0
Shares issued	0	0	0	0	0	0	0
Sources	**14,240**	**11,083**	**8,736**	**3,874**	**5,175**	**5,628**	**6,361**
Capex	(11,220)	(10,880)	(4,950)	(4,000)	(5,000)	(5,500)	(6,000)
Acquisitions	(215)	(1,492)	(128)	0	0	0	0
Dividends	(360)	(365)	(367)	(385)	(404)	(425)	(446)
Shares purchased	0	0	0	0	0	0	0
Other	2,883	813	(92)	0	0	0	0
Applications	**(8,912)**	**(11,924)**	**(5,537)**	**(4,385)**	**(5,404)**	**(5,925)**	**(6,446)**
Cash surplus/(deficit)	4,331	(2,705)	3,199	(511)	(230)	(297)	(85)
FX/other	819	17	(1,834)	0	(0)	(0)	(0)
Decrease in net debt	**5,150**	**(2,688)**	**1,365**	**(511)**	**(230)**	**(297)**	**(85)**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	8,006	10,694	9,329	9,840	10,069	10,366	10,451
Equity	35,393	25,937	14,988	14,335	14,563	15,027	15,920
Capital employed	43,399	36,631	24,316	24,174	24,632	25,393	26,371
Net debt/equity	23%	41%	62%	69%	69%	69%	66%
Net debt/Net debt & Equity	18%	29%	38%	41%	41%	41%	40%
NAV	107.3	95.1	64.2	63.3	64.1	65.8	68.0
ROAE	12.8%	11.0%	-2.8%	0.0%	7.7%	9.7%	12.8%
ROACE	9.8%	8.4%	-1.3%	0.6%	5.0%	6.1%	7.9%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	32,696	32,938	16,065	16,150	16,235	16,320	16,405
Core net debt (inc. associates)	10,581	8,250	7,806	7,180	7,628	7,866	8,156
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**43,277**	**41,188**	**23,871**	**23,329**	**23,862**	**24,185**	**24,560**
Net income before minorities	3,216	2,283	(436)	(268)	633	889	1,338
DD&A + exploration	5,431	5,157	4,175	4,027	4,264	4,432	4,615
Other group non-cash items	403	(146)	(1,232)	(808)	(679)	(659)	(567)
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	113	97	354	180	164	164	163
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**9,163**	**7,391**	**2,861**	**3,132**	**4,381**	**4,827**	**5,550**
EV/DACF	**4.7x**	**5.6x**	**8.3x**	**7.4x**	**5.4x**	**5.0x**	**4.4x**

BG Group

Investment case

The investment case of BG is clearly directly tied to the proposed merger with Royal Dutch Shell. We expect this deal to go through with perhaps some minor value leakage associated with regulatory clearance etc. We are clear that there is strategic sense for Shell to do it. We see the timing of the bid from Shell as tactically astute. BG brings with it an exceptional position in the deepwater Santos Basin in Brazil and a world class LNG business. While it is right to be sensitive to the problems in Brazil associated with the economy, the corruption scandals and the financial distress of Petrobras and local service providers, to date progress on developing the Santos Basin has been good and the operating results exceptional. We believe that there is more upside than downside in terms of these giant discoveries as the basin is developed. Again, while there was much concern expressed in the market, BG's QCLNG has started on time and the second train is now in the process of ramping up ahead of commercial handover from Bechtel. The prospects of growing supply in the LNG market seem likely to compress the margin structure of the LNG trading business but the question remains whether this is an opportunity (more volume to execute on) or a threat (less profit to make) – we suspect a bit of both. What has been notable in recent quarterly earnings is that although EBIT/cargo has been falling, absolute EBIT has been very strong leading to upgrades in outlook. Indeed what has been clear for the past four quarters, and particularly in the two quarters reported since the bid, is the underlying momentum in performance at BG, which has resembled more closely the expectations that investors originally had for the company and the shortfall that was largely responsible for the volatile and ultimately disappointing share-price performance leading up to the Shell bid.

Financial and operational outlook

2Q 2015 gearing stood at 21% after having benefited from the sale of the Australian midstream assets. 2015 neutrality lies ~$100/bbl but this should quickly fall to below $60/bbl in 2018 as capex stabilizes and QCLNG and Brazil ramp up. This attractive level of cashflow generation is one of the chief attractions to Shell. We see gearing peaking at end-2016 at a comfortable 2016. ROACE peaked in the mid-2000s at over 25% but we estimate will be ~12% in 2019 at normalised oil prices by virtue of the increased capital on the balance sheet. We expect capex to fall from a peak of >$12bn in 2013 to $6.3bn in 2015 in any event, driving a 5-year production growth (2014-2019) of 10% mainly due to a natural inflection point in capex following a period of heavy investment in Australia and Brazil.

Upside scenario

On 2016E a US$1/bbl move on the oil price is equivalent to ~4% on net income and a 1.2% impact to DACF, all else being equal. BG shares are currently trading at a 11%-12% discount to the implied Shell offer, which ought to erode over time on progress through regulatory hurdles. We see limited risk of a usurping bid but this would likely need to be done for cash at >1,100p/share.

Downside scenario

Downside scenarios mainly relate to specific project or country risk, especially because of the high concentration in the BG portfolio. Brazil makes up ~45% of the NAV. A one-year delay in Brazil would account for 4.5% of NAV, we estimate. Brazil accounts for 40% of 2018E production. Production from Replicant FPSOs makes up 10% of 2017 forecast Brazilian production and 4% of BG EBIT. They make up 34% of forecast Brazilian production and 14% of EBIT in 2020. Market share issues around Chinese LNG could present regulatory issues for the Shell deal, although they're more likely to cause value leakage than be a deal breaker. On a deal break, we estimate that the share could fall to 900p/share based on a 15% discount to our $80/bbl LT NAV, or perhaps as low as 750p based on comparable sector multiples, but this would likely be partly offset by renewed deal conjecture in the media.

Catalysts

17 Sept	ACCC informal review of merger.
2H 2015	Australian FIRB and Chinese MOFCOM merger review.
29 Oct 2015	3Q15 results).
Early 2016	Expected closing of Shell deal.

Valuation

We have a Buy rating on BG with a 1300p price target based on the implied offer price from Royal Dutch Shell at UBS's Shell price target.

BG Group Price target: 1,300p Upside: 36% Buy

Share data				
Mkt cap (GBP bn)	32.9	FTSE 100		2.18%
Mkt cap ($ bn)	49.9	FTSE All-Share		1.73%
Price (GBp)	957.8	MSCI Pan-Euro		0.67%
12m high	1,233.0	Daily trading volume (m)		9.34
12m low	794.7	Free float		100.0%
RIC code	BG.L	Major shareholders	Blackrock	6.6%
Bloomberg code	BG/ LN		Norges Bank IM	5.0%
ADR Ratio	1.0		Vanguard	3.3%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	633	606	694	806	890	923	968
Growth	-3%	-4%	15%	16%	10%	4%	5%
Oil production (000 bbl/d)	191	222	287	336	405	455	513
Growth	11%	16%	30%	17%	20%	13%	13%
Gas production (000 mcf/d)	2650	2304	2443	2820	2915	2806	2729
Growth	-9%	-13%	6%	15%	3%	-4%	-3%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
$/£	**1.56**	**1.65**	**1.55**	**1.58**	**1.58**	**1.58**	**1.58**
E&P	4,967	3,801	964	2,731	5,742	6,767	7,582
LNG	2,643	2,540	1,243	928	1,412	1,794	2,209
T&D	0	0	0	0	0	0	0
Other operations	6	36	(9)	20	5	5	5
Adj Operating Income	**7,616**	**6,377**	**2,197**	**3,679**	**7,159**	**8,566**	**9,796**
Net Interest	(203)	(109)	(261)	(472)	(541)	(506)	(442)
Pre-tax profit	**7,413**	**6,268**	**1,937**	**3,207**	**6,618**	**8,060**	**9,354**
Tax	(3,039)	(2,233)	(639)	(1,254)	(2,593)	(3,105)	(3,492)
Minorities	0	0	0	0	0	0	0
Adj Net Income	**4,374**	**4,035**	**1,298**	**1,953**	**4,025**	**4,955**	**5,862**
Non-recurring items (net)	(1,933)	(5,078)	1,471	0	0	0	0
Rep Net Income	**2,441**	**(1,043)**	**2,769**	**1,953**	**4,025**	**4,955**	**5,862**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	3,420	3,423	3,435	3,443	3,451	3,459	3,467
EPS	0.71	-0.30	0.81	0.57	1.17	1.43	1.69
Adj EPS	1.28	1.18	0.38	0.57	1.17	1.43	1.69
Adj CEPS	2.14	2.00	1.30	1.67	2.36	2.67	2.98
DPS (net)	0.29	0.29	0.29	0.35	0.40	0.46	0.52
EPS/ADR	3.57	-1.52	4.03	2.84	5.83	7.16	8.45
Adj EPS/ADR	6.40	5.89	1.89	2.84	5.84	7.17	8.46
Adj CEPS/ADR	10.72	9.98	6.52	8.34	11.82	13.35	14.90
DPS (net)/ADR	1.44	1.44	1.44	1.73	1.98	2.28	2.62
Pay out ratio (EPS)	22%	24%	76%	61%	34%	32%	31%
Pay out ratio (Adj CEPS)	13%	14%	22%	21%	17%	17%	18%
Adj Tax rate	41%	36%	33%	39%	39%	39%	37%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Operating profit	7,616	6,377	2,197	3,679	7,159	8,566	9,796
DD&A (inc. exploration)	3,349	3,036	3,383	3,909	4,250	4,397	4,586
Other non-cash items	(120)	(198)	(451)	0	0	0	0
Working capital/other	(413)	979	(304)	240	(155)	(275)	(271)
Net cashflow from ops	**10,432**	**10,194**	**4,825**	**7,827**	**11,254**	**12,688**	**14,111**
Cash Interest paid	(560)	(556)	(635)	(792)	(801)	(766)	(702)
Cash tax paid	(2,468)	(2,616)	(747)	(1,004)	(2,204)	(2,717)	(3,055)
Cash flow from operations	**7,404**	**7,022**	**3,444**	**6,032**	**8,249**	**9,205**	**10,354**
Disposals	4,601	855	5,180	0	0	0	0
Share Issues	45	28	9	0	0	0	0
Sources	**12,050**	**7,905**	**8,633**	**6,032**	**8,249**	**9,205**	**10,354**
Capex	(10,605)	(8,510)	(5,683)	(6,016)	(5,955)	(5,960)	(6,427)
Acquisitions	(86)	(123)	93	0	0	0	0
Cash dividends paid (net)	(923)	(1,024)	(989)	(988)	(1,288)	(1,459)	(1,682)
Share purchases	(13)	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Applications	**(11,627)**	**(9,657)**	**(6,579)**	**(7,004)**	**(7,243)**	**(7,419)**	**(8,109)**
Cash surplus/(deficit)	423	(1,752)	2,054	(972)	1,006	1,786	2,245
FX/other	(4,573)	861	162	(0)	0	0	0
Decrease in net debt	**(4,150)**	**(891)**	**2,216**	**(972)**	**1,006**	**1,786**	**2,245**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt (Reported)	11,321	12,212	9,996	10,968	9,963	8,177	5,932
Equity	31,960	27,115	30,585	31,550	34,287	37,783	41,963
Capital employed	43,281	39,327	40,581	42,518	44,250	45,960	47,895
Net debt/Equity	35%	42%	33%	35%	29%	22%	14%
Net debt/Net Debt + Equity	26%	30%	25%	26%	23%	18%	12%
Net asset per share (US$)	9.3	7.9	8.9	9.2	9.9	10.9	12.1
ROAE	13%	14%	4%	6%	11%	13%	14%
ROACE	10%	10%	3%	4%	9%	10%	12%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	62,938	63,784	49,903	49,903	49,903	49,903	49,903
Core net debt (inc. associates)	11,821	12,712	10,496	11,468	10,463	8,677	6,432
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	168	168	168	168	168	168	168
Peripheral assets	0	0	0	0	0	0	0
EV	**74,926**	**76,664**	**60,567**	**61,539**	**60,533**	**58,747**	**56,502**
Net income before minorities	4,318	4,035	1,298	1,938	4,025	4,955	5,862
DD&A + exploration	3,349	3,036	3,383	3,909	4,250	4,397	4,586
Other group non-cash items	571	(383)	(108)	251	389	388	436
Core associates non-cash items	108	111	113	116	119	122	125
Core post-tax interest + pension cost	120	70	175	287	329	311	277
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**8,466**	**6,869**	**4,861**	**6,501**	**9,112**	**10,173**	**11,286**
EV/DACF	**8.9x**	**11.2x**	**12.5x**	**9.5x**	**6.6x**	**5.8x**	**5.0x**

BP

Investment case

The proposed settlement with Federal, State and local government significantly de-risks the ultimate cost of Macondo. The price is high but brings with it the virtue of providing certainty. With the Gulf Coast facility also closed investors can now generate a reasonably good estimate of compensation costs as well. We estimate a full final cost of $60bn pre-tax. While investors are now clearer concerning the ultimate cost, the bad news is that cash payments will be a drag on the financial position of BP for the foreseeable future. Importantly though BP now has considerably more freedom to pursue its strategy, which will clearly involve greater cost efficiency and may also see both US acquisitions via its L48 operations as well as the pursuit of International opportunities. This is a natural strategic course of action for a super-major and we had been concerned that BP might miss the opportunity this cycle. The disposals conducted since 2012 were well executed but did narrow the operating base of BP and, combined with a halt in the core GoM activity, leaves the Upstream segment with a shortfall in momentum, in our view. Unfortunately, also, the two large inorganic investments since 2010 (India $7bn; Brazil – a portion of $7bn) don't appear to have been successes as yet. The good news is that the fall in the oil price and the considerable slowing in industry activity gives BP breathing space, highlights the underlying robust profitability of BP's upstream portfolio, and plays to BP's traditional corporate strengths of M&A, returns-oriented capital allocation, and cost management.

In the Upstream, 2015 start-ups are mainly expansions of existing assets, but 2016/17 should see volumes and margins boosted by US and North Sea start-ups and Oman, while longer-term focus is on the GoM, North Sea, Egypt, Canada, Angola, Egypt and Azerbaijan. Intense work on the carved-out L48 business is ongoing, with significant cost and efficiency improvements being realised, although its gas bias limits profitability. While 3Q Downstream results will likely be impacted by the shutdowns at Whiting, in general BP's downstream is well sorted, focussed and strongly profitable. However, simplification and efficiency efforts continue with the aim of generating $1.6bn of incremental cash-cost efficiencies

Financial and operational outlook

2Q 2015 gearing stood at 18%, within the 0-20% target banding, although there is scope to allow this to rise now uncertainty relating to the final Macondo obligation has eased. We estimate 2015 cash neutrality is achieved at >$100/bbl because of Macondo payments, etc, but will fall below $75/bbl in 2016 and below $70/bbl after 2019 when opex and capex efficiencies are fully felt (this after $4/boe for Macondo and a full cash dividend from 2018). We see y/y gearing peaking in 2016 at 19%, helped by ongoing disposals to offset cash shortfall. We estimate normalised ROACE moving to ~10%. We expect capex to average $17-18bn, from $23-24bn in 2013/14, implying capex intensity of $19-20/boe ex-Rosneft. Production growth to 2019 is forecast to average ~1%

Upside scenario

$1/bbl higher oil price generates 3% EPS upside and 1% cashflow upside. A $5/bbl higher WCS-WTI spread than modelled gives a 4% upside to 2016E EPS. A 10-year peak EV/DACF of 9.7x on 2015E would yield a valuation of ~750p. A 2017 5% dividend yield (in-line with history) implies a 550p share price.

Downside scenario

Oil price and benchmark spreads generate the same downside risk. Loss of Rosneft value would represent 8% of EV. The company is also very sensitive to any further large-scale incidents taking place given its history. A 10-year trough EV/DACF of 3.1x on normalised earnings would give a price per share of ~200p.

Catalysts

27 October 2015	3Q15 results.
4Q15/1Q16	Sanction of Mad Dog 2.
January 2016	MDL 2185 starts.

Valuation

Our price target of 420p (from 450p) is set at a 2017E EV/DACF of 5.6x, in line with the European super-majors, vs. the sector at 5.4x and the 3-year average at 5.2x. This equates to a 2017E P/E of 12.2x and current dividend yield of 6.3% (3-year average multiples of 8.7x and 4.8%, respectively). We are raising our rating on BP to Buy from Neutral on valuation.

BP | Price target: 420p | Upside: 24% | Buy

Share data				
Mkt cap (£ bn)	61.9	FTSE 100		4.13%
Mkt cap ($ bn)	94.0	FTSE All-Share		3.29%
Price (p)	338	MSCI Pan-Euro		1.26%
12m high	484	Daily trading volume (m)		34.9
12m low	331	Free float		100%
RIC code (ADR)	BP.L	Major Shareholders	Blackrock	6.2%
Bloomberg code	BP/ LN		Legal & General	3.3%
ADR ratio	6		Capital Group	2.9%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	3231	3152	3244	3268	3268	3295	3339
Growth	-3%	-2%	3%	1%	0%	1%	1%
Ref thru'puts (000 b/d)	1793	1721	1715	1725	1753	1782	1811
Growth	-24%	-4%	0%	1%	2%	2%	2%
Product sales (000 b/d)	3085	3130	3208	3288	3371	3455	3541
Growth	-4%	1%	2%	2%	2%	3%	3%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
$/£	**1.56**	**1.65**	**1.55**	**1.58**	**1.58**	**1.58**	**1.58**
E & P	18,265	15,201	2,399	5,192	9,357	10,878	12,122
TNK-BP/Rosneft	2,169	2,122	1,301	1,417	1,439	1,460	1,482
R & M	3,632	4,441	7,742	6,496	6,921	7,205	7,484
Corporate & other	(1,898)	(1,340)	(1,491)	(1,440)	(1,400)	(1,400)	(1,400)
Consolidation adjustment	579	641	(65)	(76)	(80)	(40)	(40)
RC Operating Profit	**22,747**	**21,065**	**9,887**	**11,590**	**16,237**	**18,103**	**19,648**
Interest expense	(1,509)	(1,424)	(1,456)	(1,505)	(1,543)	(1,519)	(1,479)
Tax	(7,532)	(7,035)	(1,631)	(3,278)	(5,044)	(5,751)	(6,280)
Minorities	(307)	(223)	(124)	(100)	(148)	(165)	(177)
RC Net Income (Adj)	**13,399**	**12,383**	**6,675**	**6,707**	**9,501**	**10,669**	**11,712**
Specials/exceptionals	10,253	(4,250)	(9,336)	(488)	(283)	(261)	(240)
Stock profits	(230)	(4,106)	656	(217)	(228)	(114)	(114)
HC Net Income (Rep)	**23,422**	**4,027**	**(2,005)**	**6,002**	**8,990**	**10,293**	**11,358**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	18,866	18,406	18,309	18,559	18,841	19,022	19,102
Rep EPS	1.24	0.22	-0.11	0.32	0.48	0.54	0.59
Adj EPS	0.71	0.67	0.36	0.36	0.50	0.56	0.61
Adj CEPS	1.57	1.65	1.74	1.10	1.25	1.38	1.49
DPS (net)	0.37	0.40	0.40	0.41	0.41	0.42	0.43
Rep EPS	79.4p	13.3p	(7.1)	20.5p	30.2p	34.2p	37.6p
Adj EPS	45.4p	40.8p	23.5p	22.9p	31.9p	35.5p	38.8p
Adj CEPS	100.3p	100.4p	112.5p	69.3p	79.0p	87.5p	94.2p
DPS (net)	23.7p	24.0p	25.8p	25.7p	26.2p	26.7p	27.3p
Rep EPS/ADR	7.45	1.31	-0.66	1.94	2.86	3.25	3.57
Adj EPS/ADR	4.26	4.04	2.19	2.17	3.03	3.37	3.68
Adj CEPS/ADR	9.42	9.92	10.47	6.57	7.49	8.29	8.93
DPS (net)/ADR	2.22	2.37	2.40	2.44	2.48	2.53	2.59
Pay out ratio (EPS)	52%	59%	110%	112%	82%	75%	70%
Pay out ratio (Adj CEPS)	24%	24%	23%	37%	33%	31%	29%
Tax rate (RC)	35%	36%	19%	33%	34%	35%	35%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net income	23,422	4,027	(2,005)	6,002	8,990	10,293	11,358
Minorities	307	223	124	100	148	165	177
DD&A	13,510	15,133	15,511	15,942	16,429	17,115	17,881
Exploration expensed	2,710	3,059	1,285	811	851	893	937
Other (including Macondo)	(12,006)	3,387	5,349	(622)	(1,233)	(758)	(791)
Working capital	(6,843)	6,925	(87)	(2,561)	(2,435)	(1,201)	(1,618)
Net cash flow from ops	**21,100**	**32,754**	**20,178**	**19,673**	**22,750**	**26,507**	**27,943**
Disposals	22,177	3,618	5,102	800	800	800	800
Shares issued	244	210	114	236	248	261	274
Sources	**43,521**	**36,582**	**25,393**	**20,709**	**23,798**	**27,568**	**29,018**
Capex	(24,520)	(22,546)	(19,292)	(17,613)	(16,945)	(17,124)	(17,511)
Acquisitions	(5,445)	(515)	(428)	0	0	0	0
Dividends	(5,878)	(6,096)	(6,331)	(6,000)	(6,211)	(8,013)	(8,219)
Share purchases	(5,500)	(4,799)	0	0	0	0	0
Applications	**(41,343)**	**(33,956)**	**(26,051)**	**(23,612)**	**(23,156)**	**(25,137)**	**(25,730)**
Cash surplus / (deficit)	2,178	2,626	(658)	(2,903)	642	2,431	3,288
FX / other	1,547	(183)	1,070	0	0	(0)	0
Decrease in net debt	**3,725**	**2,443**	**412**	**(2,903)**	**642**	**2,431**	**3,288**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	25,205	22,762	22,350	25,252	24,610	22,180	18,892
Total debt	48,192	52,854	55,233	58,135	57,493	55,063	51,775
Equity	130,407	112,642	106,393	106,792	110,029	112,800	116,460
Capital employed	155,612	135,404	128,743	132,044	134,640	134,980	135,351
Net debt/Equity	19%	20%	21%	24%	22%	20%	16%
Net debt/Net debt & Equity	16%	17%	17%	19%	18%	16%	14%
Net asset per share	442	371	375	364	370	375	386
ROAE	10.6%	7.3%	7.4%	6.1%	8.4%	9.4%	10.0%
ROACE	9.7%	9.5%	6.1%	5.9%	8.2%	9.0%	9.7%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	136,448	144,601	93,998	93,998	93,998	93,998	93,998
Core net debt (inc. associates)	40,254	55,233	40,099	39,618	38,957	35,944	31,249
Buy-out of minorities	3,070	2,230	1,241	1,001	1,482	1,648	1,772
Pension provisions	8,402	11,420	11,420	11,420	11,420	11,420	11,420
Peripheral assets/Macondo	7,116	17,371	12,041	10,413	8,709	7,824	7,194
EV	**195,290**	**230,854**	**158,800**	**156,450**	**154,566**	**150,833**	**145,633**
Net income before minorities	13,476	12,606	6,800	6,807	9,650	10,834	11,889
DD&A + exploration	16,220	18,192	16,796	16,753	17,280	18,008	18,818
Other group non-cash items	3,965	3,403	3,514	3,631	3,751	3,872	3,994
Core associates non-cash items	400	400	400	400	400	400	400
Core post-tax interest + pension cost	1,322	1,688	1,680	1,494	1,452	1,377	1,290
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**35,382**	**36,289**	**29,190**	**29,086**	**32,532**	**34,490**	**36,391**
EV/DACF	**5.5x**	**6.4x**	**5.4x**	**5.4x**	**4.8x**	**4.4x**	**4.0x**

Cabot Oil & Gas

Investment case

Cabot is a premier gas-weighted E&P boasting attractive double-digit natural-gas-driven production growth while maintaining a stronger balance sheet than most of its peers. While it is enduring pricing headwinds and infrastructure bottlenecks in the Marcellus that constrain its production growth, it's still capable of delivering above-average debt-adjusted cash flow per share growth and its strong balance sheet and superior asset base should enable it to weather pricing weakness better than peers. Meanwhile, the company is actively securing long-term takeaway contracts that should drive visible, attractive cash-flow growth. Even baking in a wider long-term differential, we believe COG is valued at a discount on P/NAV vs. both oil and gas resource E&Ps.

Financial and operational outlook

We believe COG is capable of delivering double-digit production growth in 2016 even at low commodity prices, but the extent of the growth depends on market conditions. While timing of the Constitution Pipeline start-up remains a key uncertainty for COG's 2016 production, we note that COG currently has gross transport capacity of 2.0-2.1 Bcfd in the Marcellus, which it can achieve with improved pricing. This implies potentially double-digit production growth in 2016 (pending market conditions) before baking in Constitution contribution. We model a bump in capex from $970 million in 2015 to $1.1 billion in 2016 (above consensus of $1.0 billion), enabling 9% growth and a modest $260 million free cash flow deficit at the futures strip, roughly in line with 2015E assuming the futures curve.

Upside scenario

Our upside scenario assumes: 1) higher than-expected-takeaway capacity addition enabling Marcellus growth to come in above our expectations; 2) better-than-expected realized Marcellus differential due to ability to secure favorable contracts; and 3) improved results in the Eagle Ford lead to higher liquids revenue contribution. Under this scenario, we could see Cabot's NAV increase to $43 implying a valuation of $35/share, or 0.8x NAV.

Downside scenario

Our downside case scenario assumes: 1) midstream expansions fall behind schedule, resulting in lower-than-expected production growth; 2) weaker-than-expected pricing differentials in the Marcellus and worse-than-expected takeaway constraints; 3) delineation of eastern and northern portion of Marcellus acreage delivers inferior well results; and 4) liquids-rich assets underperform expectations. Under this scenario, we could see Cabot depreciating to 0.55x 2P NAV, or ~$20/share.

Catalysts

September 2015: Receive final permits from New York Department of Conservation to enable construction to being on Constitution Pipeline.

2015-16: Further increase in firm takeaway capacity and/or sales contract additions in the Marcellus.

2015-16: Quarterly differential realizations.

2015-16: Potential Marcellus and Eagle Ford downspacing results.

Valuation

COG trades at discount to peers on P/NAV. Our $30 price target is based on ~0.80x our 2P NAV of ~$39/share.

Cabot Oil & Gas | Price target: $30 | Upside: 32% | Buy

Share data				
Mkt cap ($ bn)	9.4	% of S&P 500		0.11%
Mkt cap ($ bn)	9.4	Daily trading volume (m)		1.34
Price ($)	22.8	Free float		98.6%
12m high	35.40	Major shareholders	Capital Research	10.9%
12m low	21.30		Vanguard Group	8.4%
RIC code	COG.N		Fidelity M&R	6.1%
Bloomberg code	COG US			

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	189	243	282	315	379	455	545
Growth	55%	29%	16%	12%	20%	20%	20%
Oil production (000 bbl/d)	9	11	17	19	22	27	32
Growth	34%	23%	57%	10%	20%	20%	20%
Gas production (000 mcf/d)	1080	1392	1589	1776	2141	2565	3075
Growth	56%	29%	14%	12%	21%	20%	20%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**98.02**	**92.89**	**49.00**	**52.50**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	1,697	2,012	1,634	2,051	3,127	4,081	4,892
Other Revenues	13	(11)	(10)	(15)	0	15	0
Total Revenues	**1,710**	**2,001**	**1,624**	**2,036**	**3,127**	**4,096**	**4,892**
Costs	(370)	(495)	(584)	(674)	(841)	(1,047)	(1,304)
Admin, G&A	(53)	(61)	(59)	(63)	(71)	(81)	(93)
DD&A	(651)	(633)	(675)	(760)	(895)	(1,052)	(1,235)
Exploration expense	(18)	(29)	(31)	(35)	(42)	(50)	(60)
Adj Operating Income	**574**	**736**	**228**	**445**	**1,187**	**1,748**	**2,058**
Other income & Associates	7	7	14	4	4	4	4
Net interest	(65)	(74)	(96)	(97)	(81)	(68)	(57)
Pre-tax profit	**516**	**670**	**146**	**352**	**1,110**	**1,683**	**2,005**
Tax	(218)	(265)	(44)	(144)	(424)	(625)	(740)
Minorities	0	0	0	0	0	0	0
Other	(0)	0	0	0	0	0	0
Adj Net income	**298**	**405**	**102**	**208**	**686**	**1,059**	**1,265**
Special items	0	0	0	0	0	0	0
Rep Net income	**298**	**405**	**102**	**208**	**686**	**1,059**	**1,265**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	422	418	415	415	415	415	415
EPS	$0.71	$0.97	$0.25	$0.50	$1.65	$2.55	$3.05
Adj EPS	$0.71	$0.97	$0.25	$0.50	$1.65	$2.55	$3.05
Adj CEPS	$2.73	$3.09	$2.00	$2.70	$4.65	$5.95	$7.00
DPS (net)	$0.06	$0.08	$0.08	$0.08	$0.09	$0.10	$0.11
Pay out ratio (EPS)	9%	8%	33%	16%	5%	4%	3%
Pay out ratio (Adj CEPS)	2%	3%	4%	3%	2%	2%	2%
Tax rate	42%	40%	30%	41%	38%	37%	37%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	280	104	51	208	686	1,059	1,265
DD&A	651	633	675	760	895	1,052	1,235
Exploration	1	8	31	35	42	50	60
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	138	(113)	19	116	297	309	348
Working capital/other	45	(604)	(77)	(0)	0	(0)	0
Net cashflow from ops	**1,025**	**1,236**	**852**	**1,118**	**1,920**	**2,469**	**2,908**
Disposals	324	39	3	0	0	0	0
Shares issued	0	0	0	0	0	0	0
Sources	**1,348**	**1,276**	**855**	**1,118**	**1,920**	**2,469**	**2,908**
Capex	(1,242)	(1,490)	(1,015)	(1,100)	(1,485)	(1,782)	(2,138)
Acquisitions	0	(215)	(16)	0	0	0	0
Dividends	(25)	(33)	(33)	(33)	(36)	(40)	(44)
Shares purchased	0	0	0	0	0	0	0
Other	(148)	(146)	(2)	0	0	0	0
Applications	**(1,415)**	**(1,883)**	**(1,067)**	**(1,133)**	**(1,521)**	**(1,822)**	**(2,182)**
Cash surplus/(deficit)	(67)	(607)	(211)	(15)	398	647	725
FX/other	77	(54)	67	0	0	0	0
Decrease in net debt	**10**	**(662)**	**(144)**	**(15)**	**398**	**647**	**725**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	1,176	1,838	1,981	1,996	1,598	950	225
Equity	2,205	2,143	2,168	2,342	2,992	4,011	5,232
Capital employed	3,381	3,980	4,149	4,338	4,590	4,961	5,457
Net debt/equity	53%	86%	91%	85%	53%	24%	4%
Net debt/Net debt & Equity	35%	46%	48%	46%	35%	19%	4%
NAV	8.0	9.5	10.0	10.5	11.1	12.0	13.1
ROAE	22.3%	29.0%	5.6%	14.3%	36.8%	39.1%	34.9%
ROACE	16.0%	18.6%	4.7%	8.9%	22.8%	29.2%	31.3%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	14,356	14,296	9,423	9,409	9,409	9,409	9,409
Core net debt (inc. associates)	1,181	1,507	1,909	1,989	1,797	1,274	588
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**15,537**	**15,803**	**11,333**	**11,397**	**11,206**	**10,683**	**9,996**
Net income before minorities	298	405	102	208	686	1,059	1,265
DD&A + exploration	669	662	706	795	937	1,102	1,295
Other group non-cash items	185	224	21	117	306	307	344
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	61	69	79	89	72	55	46
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**1,213**	**1,361**	**908**	**1,208**	**2,001**	**2,523**	**2,950**
EV/DACF	**12.8x**	**11.6x**	**12.5x**	**9.4x**	**5.6x**	**4.2x**	**3.4x**

Canadian Natural Resources Limited

Investment case

CNQ is a relatively well-positioned E&P company boasting significant production from low-decline long-life assets, a deep and balanced resource base, and significant exposure to heavy oil prices, which we are bullish on longer term. The company is emerging from a decade-long transition to long-life low-decline assets, which should see free cash flow grow substantially over the coming years. Importantly, the growth outlook from Horizon, its key asset, boasts half-cycle supply costs in the $50/bbl range and declining sustaining capital requirements leave the company able to fund growth. We forecast free cash flow to grow to $3.1 billion by 2018, ahead of current dividend obligations of $1.0 billion, and accompanied by annual average production growth of 5%. While we believe it is likely that some of the free-cash-flow growth will be used to lower debt or for organic/inorganic growth, we point to consistent dividend increases as a signal that returning cash to shareholders will be a priority. Additionally, we believe the company's monetization of its fee-based lands could generate proceeds in the $1.5 billion range, or incremental value of $0.75/sh. We rate CNQ a Buy with a Price Target of $35, which is based on 9.8x/7.5x our 2016E/2017E DACF.

Financial and operational outlook

CNQ is in reasonable financial shape with forecasted 2015E Net Debt/Capitalization of 38% and Net Debt/Cash Flow of 3.3x. Importantly, the company has ample liquidity and remains well within its debt covenants (Net Debt/Cap <60%). We estimate that 2016 cash neutrality is achieved at $63/bbl, though we note our forecast contains significant growth capital for its Horizon expansion, and estimate the company could fund its sustaining capital and dividend at an oil price down to $55/bbl. We estimate Net Debt/Cap peaks in 2016 at 39% and cash as spending on the company's Horizon project begins to wind down and associated cash flows come on stream. As a result we expect capex to fall from a peak of $8.7 bn in 2014 to $6.5 bn in 2018 and 5-year production growth (2015-2020) of 5% driven by additions from Horizon and Western Canadian Liquids volumes.

Upside scenario

Our upside case assumes CNQ successfully executes its planned Horizon expansion for 10% below current capital guidance and 6 months ahead of the current scheduled date of late 2017. As a result the company's average 2015-2018 debt-adjusted cash flow per share growth increases, free cash flow rises sooner, and we raise our target multiple by 1.0x to 10.8x. Assuming this multiple – and a $0.50/MMBtu increase in natural gas prices and a $5.00/Bbl increase WTI prices (as well as a $2/bbl decrease in the WTI/WCS differential) – implies upside to ~$56/share.

Downside scenario

Our downside case assumes CNQ executes its planned Horizon expansion 12 months behind the current scheduled date of late 2017. As a result the company's average 2015-2018 debt adjusted cash flow per share growth decreases, free cash flow does not occur until 2019, and we decrease our target multiple by 1.0x to 8.8x. Assuming this multiple – and a $0.50/MMBtu decrease in natural gas prices and a $5.00/Bbl decrease in WTI prices (as well as a $2/bbl decrease in the WTI/WCS differential) – implies downside to ~$17/share.

Catalysts

2015	Sale or IPO of CNQ's fee-based lands.
2015	Horizon and Kirby reliability updates.
2016	Horizon Phase 2b expansion volumes expected on stream.
2017	Horizon Phase 3 expansion volumes expected on stream.

Valuation

At 7.8x 2016E debt-adjusted cash flow, CNQ shares trades at a slight premium to the peer group average, reflecting a strong balance sheet and above-average DACFPS growth. In time we expect the premium to grow, driven by growing free cash flow. Our $35 price target (down from $46) assumes 9.8x 2016E DACF, a 5% premium to the peer group. Our target multiple balances a significantly higher forecasted DACFPS growth rate with modest execution risk. We think the market is yet to fully appreciate CNQ's expected growth in free cash flow. In time we expect the company to trade at a premium multiple, driven by superior free-cash-flow growth.

Canadian Natural | Price target: $35 | Upside: 28% | Buy

Share data				
Mkt cap ($ bn)	30.0	% of TSX 60		2.41%
Mkt cap ($ bn)	22.6	% of MSCI Energy		0.98%
Price ($)	27.4	Daily trading volume (m)		3.10
12m high	45.74	Free float		97.2%
12m low	25.84	Major shareholders	Capital Group	9.0%
RIC code	CNQ.TO		T. Rowe Price	4.6%
Bloomberg code	CNQ CN		RBC AM	3.1%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	864	1049	1144	1134	1168	1253	1277
Growth	1%	21%	9%	-1%	3%	7%	2%
Oil production (000 bbl/d)	671	790	855	857	892	978	1002
Growth	3%	18%	8%	0%	4%	10%	3%
Gas production (000 mcf/d)	1158	1554	1737	1661	1657	1653	1649
Growth	-5%	34%	12%	-4%	0%	0%	0%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**98.02**	**92.89**	**49.00**	**52.50**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	17,835	21,181	13,297	14,988	18,533	21,444	23,506
Other Revenues	110	120	140	140	140	140	140
Total Revenues	**17,945**	**21,301**	**13,437**	**15,128**	**18,673**	**21,584**	**23,646**
Costs	(7,441)	(7,827)	(7,224)	(7,582)	(7,964)	(8,794)	(9,001)
Admin, G&A	(335)	(367)	(401)	(392)	(407)	(446)	(457)
Royalties	(1,800)	(2,438)	(772)	(998)	(1,537)	(1,901)	(2,191)
DD&A	(4,844)	(4,880)	(5,392)	(5,489)	(5,634)	(6,311)	(6,447)
Operating Profit	**3,525**	**5,789**	**(352)**	**667**	**3,131**	**4,133**	**5,550**
Other income & Associates	0	0	0	0	0	0	0
Net interest	(489)	(626)	(618)	(347)	(267)	(236)	(218)
EBT	**3,036**	**5,163**	**(970)**	**320**	**2,865**	**3,897**	**5,332**
Tax	(766)	(1,234)	(48)	(48)	(773)	(1,052)	(1,440)
Minorities	0	0	0	0	0	0	0
Rep Net income	**2,270**	**3,929**	**(1,017)**	**272**	**2,091**	**2,845**	**3,893**
Special items	150	(118)	856	0	0	0	0
Adj Net income	**2,420**	**3,811**	**(161)**	**272**	**2,091**	**2,845**	**3,893**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	1,091	1,098	1,095	1,100	1,106	1,112	1,117
EPS	$2.08	$3.58	($0.93)	$0.25	$1.89	$2.56	$3.48
Adj EPS	$2.22	$3.47	($0.15)	$0.25	$1.89	$2.56	$3.48
Adj CEPS	$6.65	$8.38	$4.66	$5.30	$7.31	$8.68	$9.83
DPS (net)	$0.58	$0.88	$0.92	$0.92	$0.92	$0.92	$0.92
Pay out ratio (EPS)	26%	25%	-620%	372%	49%	36%	26%
Pay out ratio (Adj CEPS)	9%	10%	20%	17%	13%	11%	9%
Tax rate	25%	24%	161%	20%	25%	25%	25%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	2,270	3,929	(1,017)	272	2,091	2,845	3,893
DD&A	4,844	4,880	5,392	5,489	5,634	6,311	6,447
Deferred Taxes	31	807	169	19	309	421	576
Other non-cash items	73	(1,157)	364	46	52	72	74
Working capital	(33)	(744)	(196)	0	0	0	0
Net cashflow from ops	**7,185**	**7,715**	**4,712**	**5,826**	**8,087**	**9,648**	**10,989**
Disposals	0	0	0	0	0	0	0
Shares issued	(190)	35	83	0	0	0	0
Sources	**6,995**	**7,750**	**4,795**	**5,826**	**8,087**	**9,648**	**10,989**
Capex	(7,067)	(8,652)	(5,500)	(5,330)	(6,969)	(6,514)	(6,699)
Acquisitions	(58)	(2,746)	0	0	0	0	0
Dividends	(523)	(955)	(1,000)	(1,012)	(1,017)	(1,023)	(1,028)
Applications	**(7,648)**	**(12,353)**	**(6,500)**	**(6,342)**	**(7,987)**	**(7,537)**	**(7,727)**
Cash surplus/(deficit)	(653)	(4,603)	(1,705)	(516)	100	2,112	3,262
FX/other	(582)	935	(407)	475	3,065	-1,049	1,000
Decrease in net debt	**(1,235)**	**(3,668)**	**(2,113)**	**(41)**	**3,165**	**1,063**	**4,262**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	11,235	14,903	17,016	17,057	13,891	12,829	8,567
Equity	25,772	28,891	27,342	26,917	30,895	31,508	35,213
Capital employed	37,007	43,794	44,358	43,973	44,787	44,337	43,780
Net debt/equity	44%	52%	62%	63%	45%	41%	24%
Net debt/Net debt & Equity	30%	34%	38%	39%	31%	29%	20%
NAV	33.9	39.9	40.5	40.0	40.5	39.9	39.2
ROAE	8.8%	13.6%	-3.7%	1.0%	6.8%	9.0%	11.1%
ROACE	7.1%	10.1%	-0.8%	1.3%	5.1%	6.8%	9.3%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	34,644	46,021	30,034	30,188	30,345	30,503	30,661
Core net debt (inc. associates)	11,235	14,903	17,016	17,057	13,891	12,829	8,567
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**45,880**	**60,924**	**47,050**	**47,244**	**44,237**	**43,332**	**39,227**
Net income before minorities	2,270	3,929	(161)	272	2,091	2,845	3,893
DD&A + exploration	4,844	4,880	5,392	5,489	5,634	6,311	6,447
Other group non-cash items	(16)	168	-4,317	1,271	425	519	653
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	362	468	4,449	(946)	137	151	160
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**7,460**	**9,445**	**5,362**	**6,087**	**8,287**	**9,825**	**11,152**
EV/DACF	**6.1x**	**6.5x**	**8.8x**	**7.8x**	**5.3x**	**4.4x**	**3.5x**
EV/DACF $	**6.1x**	**6.5x**	**8.5x**	**7.5x**	**4.9x**	**3.9x**	**3.1x**

Cenovus Energy

Investment Case

CVE is an integrated oil and gas company with a low cost structure and significant production growth potential from long life assets. With a strong balance sheet and its dividend right-sized, the company is now in a position to consider restarting suspended growth projects assuming appropriate market conditions. Importantly, we believe volumes from suspended projects could add volumes at look forward supply costs in the $50 - $65/bbl range. Assuming market conditions are not favourable we see scope for share buybacks, which could provide support for the share price. At 9.9x 2016E debt-adjusted cash flow CVE shares trade 10% above the integrated peer group average, despite an inferior near-term growth outlook. We believe this is a function of asset quality and longer term growth potential at higher oil prices. Our $21 price target assumes 12.8x 2016E DACF, a 12% premium to the integrated peer group based on higher forecasted long term DACFPS growth.

Financial and operational outlook

CVE is in solid financial shape with 2015E Net Debt/Capitalization of 12% and Net Debt/Cash Flow of 0.8x. The company has ample liquidity, with ~$3.9 billion in cash on the balance sheet (pro-forma the recent sale of royalty lands) and significant room under its financial covenants. We estimate that 2016 cash neutrality is achieved at $62.50/bbl (WTI), though we note this contains significant growth spending, and estimate the company could fund its sustaining capital and dividend at an oil price down to $55/bbl. We estimate Net Debt/Cap rises towards 18% in 2018 as the company resumes spending on one of its suspended projects. Similarly, we expect capex to grow from $1.5 bn in 2015 to $4.3 bn in 2018 and 5-year production growth (2015-2020) of 5% driven by low cost debottlenecking at Foster Creek and Christina Lake and restarting the suspended Narrows Lake project.

Upside scenario

Our upside case assumes the oil price a $0.50/MMBtu increase in natural gas prices and a $5.00/Bbl increase in WTI prices (as well as a $2/bbl decrease in the WTI/WCS differential). Under such a scenario CVE can accelerate development of its significant in-situ resource. As a result the company's average 2015-2018 debt adjusted cash flow per share growth increases, free cash flow rises sooner, and we raise our target multiple by 1.0x to 13.5x. – implies upside to ~$35/share.

Downside scenario

Our downside case assumes a $0.50/MMBtu decrease in natural gas prices and a $5.00/Bbl decrease WTI prices (as well as a $2/bbl increase in the WTI/WCS differential). Under such a scenario CVE would defer development of its significant in-situ resource. As a result the company's average 2015-2018 debt adjusted cash flow per share growth increases, free cash flow rises sooner, and we raise our target multiple by 1.0x to 11.8x, which is partially offset by some share buybacks and – implies downside to ~$14/share.

Catalysts

2015 Quarterly results: We believe there is downside to the company's capital spending guidance and cost guidance.

2015 December budget release: Further details on the company's use of proceeds.

2016 Debottlenecking potential at Foster Creek and Christina Lake.

Valuation

At 9.9x 2016E debt-adjusted cash flow CVE shares trade 10% above the integrated peer group average, despite an inferior near-term growth outlook. We believe this is a function of asset quality and longer term growth potential at higher oil prices. Our $21 price target (down from $24) assumes 12.8x 2016E DACF, a 12% premium to the integrated peer group based on higher forecasted long term DACFPS growth.

Cenovus   Price target: $21   Upside: 16%   Buy

Share data				
Mkt cap ($ bn)	15.0	% of TSX 60		1.07%
Mkt cap ($ bn)	11.3	% of MSCI Energy		0.44%
Price ($)	18.2	Daily trading volume (m)		2.52
12m high	34.09	Free float		99.9%
12m low	15.92	Major shareholders	RBC AM	4.3%
RIC code	CVE.N		First Eagle	3.8%
Bloomberg code	CVE US		Beutel, Goodman & Co	3.7%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	268	285	280	284	310	334	347
Growth	1%	6%	-2%	1%	9%	8%	4%
Ref thru'puts (000 b/d)	221	212	219	219	207	207	207
Growth	7%	-4%	4%	0%	-5%	0%	0%

Profit & Loss (C$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**98.02**	**92.89**	**49.00**	**52.50**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P	1,553	2,201	(258)	51	1,009	1,370	1,332
R&M	1,031	28	443	460	502	478	594
Corporate & Other	(423)	(435)	(367)	(336)	(349)	(355)	(360)
Operating Profit	**2,161**	**1,794**	**(182)**	**175**	**1,162**	**1,493**	**1,567**
Other income & Associates	0	0	0	0	0	0	0
Net interest	(433)	(292)	(309)	(302)	(294)	(279)	(192)
Hedging	(293)	662	285	20	0	0	0
Other	(349)	(969)	(562)	(125)	(124)	(124)	(124)
Pre-tax Profit	**1,086**	**1,195**	**(768)**	**(232)**	**744**	**1,089**	**1,251**
Tax	(432)	(451)	205	81	(260)	(381)	(438)
Minorities	0	0	0	0	0	0	0
Adj Net income	**1,171**	**633**	**43**	**(151)**	**483**	**708**	**813**
Special items	(517)	111	(605)	0	0	0	0
Rep Net income	**654**	**744**	**(562)**	**(151)**	**483**	**708**	**813**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	757	758	819	833	833	833	833
EPS	0.86	0.83	0.05	-0.18	0.58	0.85	0.98
Adj EPS	1.55	0.83	0.05	-0.18	0.58	0.85	0.98
Adj CEPS	4.76	4.59	2.07	1.81	3.17	3.62	3.83
DPS (net)	0.97	1.06	0.85	0.64	0.64	0.64	0.64
Pay out ratio (EPS)	63%	127%	1243%	nmf	nmf	75%	66%
Pay out ratio (Adj CEPS)	20%	23%	31%	35%	20%	18%	17%
Tax rate	25%	23%	67%	35%	35%	35%	35%

Cash Flow (C$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	654	744	(562)	(151)	483	708	813
DD&A	1,841	1,946	1,905	1,853	1,934	2,031	2,081
Exploration	0	0	0	0	0	0	0
Other non-cash items	1,114	789	348	(197)	228	277	299
Working capital	(70)	47	(362)	0	0	0	0
Net cashflow from ops	**3,539**	**3,526**	**1,329**	**1,505**	**2,645**	**3,015**	**3,194**
Disposals	251	276	2,821	0	0	0	0
Shares issued	28	28	1,449	0	0	0	0
Sources	**3,818**	**3,830**	**5,599**	**1,505**	**2,645**	**3,015**	**3,194**
Capex	(3,262)	(3,051)	(1,884)	(1,590)	(1,941)	(2,289)	(2,276)
Acquisitions	0	0	0	0	0	0	0
Dividends	(732)	(805)	(530)	(533)	(533)	(533)	(533)
Other	1,468	(1,543)	(219)	0	0	0	(1,444)
Applications	**(2,526)**	**(5,399)**	**(2,633)**	**(2,124)**	**(2,474)**	**(2,822)**	**(4,254)**
Cash surplus/(deficit)	1,292	(1,569)	2,965	(619)	171	193	(1,061)
FX/other	(659)	(0)	18	-4	-4	-4	1,440
Decrease in net debt	**633**	**(1,570)**	**2,983**	**(623)**	**167**	**189**	**380**

Balance Sheet (C$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	2,787	4,357	1,373	1,997	1,829	1,640	1,260
Equity	9,946	10,186	9,880	9,192	9,138	9,309	9,585
Capital employed	12,733	14,543	11,254	11,189	10,967	10,949	10,845
Net debt/equity	28%	43%	14%	22%	20%	18%	13%
Net debt/Net debt & Equity	22%	30%	12%	18%	17%	15%	12%
NAV	16.8	19.2	13.7	13.4	13.2	13.1	13.0
ROAE	6.5%	7.4%	0.4%	-1.6%	5.3%	7.7%	8.6%
ROACE	7.1%	6.8%	-2.1%	0.3%	5.0%	6.4%	7.1%

EV Valuation (C$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	23,482	22,948	14,876	15,141	15,141	15,141	15,141
Core net debt (inc. associates)	2,787	4,357	1,373	1,997	1,829	1,640	1,260
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**26,269**	**27,305**	**16,249**	**17,137**	**16,970**	**16,781**	**16,401**
Net income before minorities	654	744	(562)	(151)	483	708	813
DD&A + exploration	1,841	1,946	1,905	1,853	1,934	2,031	2,081
Other group non-cash items	1,114	789	348	-197	228	277	299
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	(232)	(227)	(221)	(210)	(144)	(73)	0
less: peripheral income/cash flow	556	446	452	436	365	282	144
DACF	**3,934**	**3,698**	**1,922**	**1,731**	**2,866**	**3,225**	**3,337**
EV/DACF	**6.7x**	**7.4x**	**8.5x**	**9.9x**	**5.9x**	**5.2x**	**4.9x**
EV/DACF $	**6.7x**	**7.4x**	**8.1x**	**9.5x**	**5.3x**	**4.4x**	**4.2x**

Chesapeake Energy

Investment Case

Since assuming leadership of the company in 2013, CEO Doug Lawler's focus on capital efficiency has improved CHK's operating performance and the $5 billion southern Marcellus sale improved the company's liquidity. Unfortunately, the still burdensome legacy transportation agreements for gas and NGLs coupled with much lower oil and gas prices have dramatically squeezed CHK's margins, prompting another year of a large free cash flow deficit and below average debt-adjusted growth outlook. While CHK's $6.0 billion in liquidity should enable it to weather a period of weak commodity prices, financial leverage that is still too onerous, a declining production profile into 2016, and wide differentials leave its valuation at a large premium to peers and its historical average on 2016 estimates assuming either the futures strip or a recovery to $75/Bbl and $4/Mcf. Our $5 price target assumes ~7.0x normalized 2016E DACF.

Financial and Operational Outlook

While CHK is reviewing opportunities in multiple operating areas for strategic asset sales, JV participation, or farmout agreements, we expect its equity to remain under pressure as it continues to be a liquidity concern until CHK provides more specific details on a restructuring plan. Nonetheless, it has noted proceeds would be used towards accelerating activity in 2016 and/or improving its capital structure (net debt/cap increased from 55% in 1Q to 70% at the end of 2Q), inferring any restructuring program will have implications for 2016 capex/activity levels. And while the company is targeting to live within cash flow next year, we forecast capex to decline from $3.7 billion in 2015 to $2.7 billion in 2016, which should enable a modest 3% YoY production decline but cause a large ~$3 billion free cash flow deficit (assuming the current futures strip) over the next 18 months eating into half of CHK's liquidity.

Upside Scenario

Our upside case assumes a quicker return to more normalized oil and gas prices, which would enable CHK to reduce its free cash flow deficits and increase activity and production growth targets, while also continuing to improve capital efficiency and focus on development of its core asset portfolio. Under these assumptions, we believe CHK could appreciate to ~8.0x normalized 2016E DACF, in line with higher growth peers and would imply a valuation of ~$8/share.

Downside Scenario

Our downside case assumes continued downward pressure on oil and gas prices, a reduction in its $4.0 billion credit facility, failure to execute asset sales, and therefore increased market concerns that CHK will rapidly deplete most of its liquidity by 2016 because of large free cash flow deficits. In this scenario, we could see CHK's normalized 2016E DACF multiple compressing to a more modest 6.0x. Assuming this lower multiple - and commodity price declines (using our normalized forecasts as a base) of $0.50/MMBtu for natural gas and $5.00/Bbl for crude oil – implies downside to ~$3/share.

Catalysts

2015: Announcement of asset sales, JV drilling carries, or farmout agreements

November 2015: $396 million of contingent convertible debt puttable to CHK

Valuation

CHK trades at a premium to peers on EV/DACF despite high leverage. Our $5 price target assumes 7.0x normalized 2016E DACF, in line with the large cap E&P peer target average multiple of 6.7x.

Chesapeake Energy Price target: $5 Upside: -31% Sell

Share data				
Mkt cap ($ bn)	4.8	% of S&P 500		0.09%
Mkt cap ($ bn)	4.8	Daily trading volume (m)		3.41
Price ($)	7.3	Free float		86.2%
12m high	26.17	Major shareholders	Icahn Associates Corp.	11.0%
12m low	6.03		Capital Research	10.6%
RIC code	CHK.N		Southeastern AM	9.1%
Bloomberg code	CHK US			

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	670	706	675	652	650	654	668
Growth	3%	5%	-4%	-3%	0%	1%	2%
Oil production (000 bbl/d)	170	206	187	166	163	166	173
Growth	27%	22%	-9%	-11%	-2%	2%	4%
Gas production (000 mcf/d)	3000	3000	2924	2916	2924	2924	2968
Growth	-3%	0%	-3%	0%	0%	0%	1%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	98.02	92.89	49.00	52.50	65.00	70.00	75.00
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	6,825	6,786	4,131	3,137	4,240	4,772	5,143
Other Revenues	0	0	0	0	0	0	0
Total Revenues	**6,825**	**6,786**	**4,131**	**3,137**	**4,240**	**4,772**	**5,143**
Costs	(1,389)	(1,439)	(1,244)	(1,168)	(1,253)	(1,274)	(1,309)
Admin, G&A	(457)	(322)	(300)	(315)	(328)	(344)	(351)
Royalties	0	0	0	0	0	0	0
DD&A	(2,902)	(2,915)	(2,374)	(2,090)	(2,079)	(2,090)	(2,134)
Exploration expense	0	0	0	0	0	0	0
Adj Operating Income	**2,077**	**2,110**	**212**	**(436)**	**580**	**1,064**	**1,348**
Other income & Associates	256	82	(32)	(40)	(30)	10	5
Net interest	(161)	(162)	(269)	(272)	(272)	(272)	(272)
Pre-tax profit	**2,172**	**2,030**	**(90)**	**(748)**	**278**	**802**	**1,081**
Tax	(860)	(787)	(3)	307	(102)	(313)	(432)
Minorities	(169)	(139)	(63)	(63)	(63)	(63)	(63)
Rep Net income	**1,143**	**1,104**	**(156)**	**(504)**	**114**	**426**	**585**
Pref dividend	(172)	(172)	(172)	(172)	(172)	(172)	(172)
Net Income attrib. to common	**971**	**932**	**(328)**	**(676)**	**(58)**	**254**	**413**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	763	773	777	778	778	781	781
EPS	$1.75	$1.67	($0.24)	($0.76)	$0.17	$0.64	$0.88
Adj EPS	$1.50	$1.43	($0.20)	($0.65)	$0.15	$0.55	$0.75
Adj CEPS	$5.02	$5.19	$2.05	$0.75	$2.05	$2.75	$3.10
DPS (net)	$0.36	$0.35	$0.18	$0.00	$0.00	$0.00	$0.00
Pay out ratio (EPS)	24%	25%	0%	0%	0%	0%	0%
Pay out ratio (Adj CEPS)	7%	7%	9%	0%	0%	0%	0%
Tax rate	40%	39%	-4%	41%	37%	39%	40%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	894	2,056	(7,966)	(504)	114	426	585
DD&A	2,902	2,915	2,374	2,090	2,079	2,090	2,134
Exploration	0	0	0	0	0	0	0
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	1,159	55	7,911	(317)	92	303	422
Working capital/other	(342)	(392)	(779)	0	0	0	0
Net cashflow from ops	**4,613**	**4,634**	**1,540**	**1,269**	**2,285**	**2,819**	**3,142**
Disposals	4,504	7,055	111	0	0	0	0
Shares issued	0	0	0	0	0	0	0
Sources	**9,117**	**11,689**	**1,651**	**1,269**	**2,285**	**2,819**	**3,142**
Capex	(6,439)	(5,290)	(3,406)	(2,700)	(2,700)	(2,900)	(3,100)
Acquisitions	(1,032)	(1,311)	(500)	(500)	(400)	(350)	(300)
Dividends	(405)	(406)	(290)	(172)	(172)	(172)	(172)
Shares purchased	0	0	0	0	0	0	0
Other	(813)	(1,522)	(78)	0	0	0	0
Applications	**(8,689)**	**(8,529)**	**(4,274)**	**(3,372)**	**(3,272)**	**(3,422)**	**(3,572)**
Cash surplus/(deficit)	430	3,161	(2,623)	(2,103)	(987)	(603)	(430)
FX/other	300	2,035	54	0	0	0	0
Decrease in net debt	**730**	**5,196**	**(2,569)**	**(2,103)**	**(987)**	**(603)**	**(430)**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	17,807	12,611	15,180	17,282	18,270	18,873	19,303
Equity	12,016	12,081	3,877	3,200	3,142	3,396	3,810
Capital employed	29,823	24,692	19,056	20,483	21,412	22,269	23,113
Net debt/equity	148%	104%	392%	540%	581%	556%	507%
Net debt/Net debt & Equity	60%	51%	80%	84%	85%	85%	84%
NAV	39.1	31.9	24.5	26.3	27.5	28.5	29.6
ROAE	13.2%	12.4%	-1.3%	-12.4%	3.3%	11.5%	15.1%
ROACE	1.7%	1.1%	-8.7%	-8.4%	-3.7%	-1.2%	-0.1%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	14,135	16,262	4,816	4,823	4,823	4,823	4,823
Core net debt (inc. associates)	15,110	12,147	10,833	13,169	14,714	15,509	16,026
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**29,245**	**28,409**	**15,650**	**17,992**	**19,538**	**20,333**	**20,849**
Net income before minorities	1,143	1,104	(156)	(504)	114	426	648
DD&A + exploration	2,902	2,915	2,374	2,090	2,079	2,090	2,134
Other group non-cash items	(219)	(9)	(625)	(998)	(595)	(367)	422
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	959	785	707	777	732	752	163
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**4,785**	**4,795**	**2,300**	**1,365**	**2,329**	**2,901**	**3,368**
EV/DACF	**6.1x**	**5.9x**	**6.8x**	**13.2x**	**8.4x**	**7.0x**	**6.2x**

Chevron

Investment Case

Following a fourth consecutive year of production declines, CVX's upstream project queue should enable 6% per annum growth from 2015-17 as Gorgon LNG, Wheatstone LNG and the Lower Tertiary fields in the deepwater Gulf of Mexico come online, one of the most visible long-term growth profiles amongst peers. Amongst the 5 largest Integrateds, CVX offers the most leverage to crude prices. However, its oil price leverage and the large capex spend required to drive its above-average growth is causing very wide free cash flow deficits that are pushing up the company's financial leverage and causing investor concerns as to when CVX can return to free cash flow balance. CVX has re-rated upward with shares trading on average at a modest premium to peers on 2015-16E EV/DACF and above its historical average, and we see little scope for further upward re-rating while it generates material free cash flow deficits. Thus, we continue to rate CVX a Neutral.

Financial and Operational Outlook

CVX continues to target returning to positive free cash flow (after dividends) by 2017 assuming a recovery in Brent to ~$70/Bbl (below the current futures strip of ~$54/Bbl in 2017), Upstream margins of ~$25/Boe, and reduced capex and greater spending flexibility. Reaching free cash flow also depends on several factors: 1) ability to reduce longer-term capital spending from ~$35 billion (including affiliates) in 2015 to ranges (depending on oil prices) of ~$31-$33 billion in 2016 and ~$27-$35 billion in 2017 as its major projects under construction come on line; 2) higher cash margins per Boe as its LNG projects (>$50/Boe cash margins) come on line; and 3) growing volumes ~9% per annum to reach 3.1 MMBoed by 2017. While we can see how CVX can reasonably reduce companywide capex below the $30 billion level and get close to its production target by 2017, CVX must improve the execution of major project start-ups in order to reach cash flow neutrality by 2017 at $70/Bbl Brent; the project execution risk at Chevron is arguably higher than any other Major.

Upside Scenario

Our upside scenario assumes CVX's deep backlog of development projects come on stream as planned while also achieving greater than expected reductions in capex from self-help and oilfield service deflation, enabling the company to post both impressive upstream growth and more quickly return to positive free cash flow and able to reach cash flow parity below $70/Bbl Brent. In this scenario, we believe CVX could appreciate to a higher growth multiple of 6.5x 2016E normalized DACF, implying upside to $98/share. Relative to our normalized price forecasts, a $0.50/MMBtu and $5.00/Bbl increase in natural gas and crude oil prices, respectively, boosts this estimate to $100/share.

Downside Scenario

Our downside scenario assumes CVX fails to deliver its medium-term cash margin and portfolio improvement targets and struggles to bring its Australian LNG projects to capacity on schedule, restricting its ability to close its FCF gap. Under this scenario, we see CVX's multiple contracting to a more moderate 5.0x 2016E DACF, nearly a full turn below its current normalized multiple, implying downside to $70/share. Relative to our normalized price forecasts, a $0.50/MMBtu and $5.00/Bbl decline in natural gas and crude oil prices, respectively, reduces this estimate to $67/share.

Catalysts

4Q15-2016: potential dividend increase

December 2015: disclose 2016 capex budget

1Q16: start-up of Gorgon LNG

March 2016: updated longer-term capex budget.

Valuation

CVX appears fully valued vs. peers and historical average on EV/DACF and relative P/E. Our $81 price target assumes 6.0x normalized 2016E DACF, above its historical average of 5.6x.

Chevron Corp. Price target: $81 Upside: 6% Neutral

Share data				
Mkt cap ($ bn)	144.3	% of S&P 500		1.57%
Mkt cap ($ bn)	144.3	Daily trading volume (m)		2.40
Price ($)	76.7	Free float		100.0%
12m high	127.40	Major shareholders	Vanguard Group	6.0%
12m low	70.02		Saga Funds Mgmt.	5.5%
RIC code	CVX.N		BlackRock Advisors	4.2%
Bloomberg code	CVX US			

Operating	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Production (000 boe/d)	2597	2571	2605	2852	3015	3096	3139
Growth	0%	-1%	1%	9%	6%	3%	1%
Ref thru'puts (000 b/d)	1637	1690	1698	1704	1704	1704	1704
Growth	-4%	3%	0%	0%	0%	0%	0%
Product sales (000 b/d)	3113	3113	3113	3113	3113	3113	3113
Growth	0%	0%	0%	0%	0%	0%	0%

Profit & Loss ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
WTI Crude $/bbl	**98.02**	**92.89**	**49.00**	**52.50**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P-U.S.	4,044	3,327	(2,319)	(931)	461	1,042	1,695
E&P-Non-U.S.	16,765	13,566	1,881	4,596	8,028	9,409	10,676
E&P	20,809	16,063	1,711	3,665	8,489	10,451	12,371
R&M-U.S.	787	1,787	2,809	1,776	1,504	1,220	986
R&M-Non-U.S.	1,450	1,749	2,028	1,584	1,486	1,447	1,447
R&M	2,237	3,536	4,837	3,360	2,989	2,667	2,433
Chemicals	0	0	0	0	0	0	0
Other	(1,623)	(1,908)	(1,665)	(2,046)	(2,132)	(2,012)	(1,852)
Corporate and financing	0	0	0	0	0	0	0
Adj Net Income	**21,423**	**17,691**	**4,883**	**4,979**	**9,347**	**11,105**	**12,952**
Special items	0	0	(0)	0	0	0	0
Currency	0	0	0	0	0	0	0
Rep Net Income	**21,423**	**17,691**	**4,883**	**4,979**	**9,347**	**11,105**	**12,953**

Per Share	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
No. shares (avg)	1,932	1,898	1,884	1,890	1,890	1,890	1,890
EPS	$11.09	$9.32	$2.59	$2.64	$4.95	$5.88	$6.85
Adj EPS	$11.09	$9.32	$2.59	$2.64	$4.95	$5.88	$6.85
Adj CEPS	$18.80	$16.87	$10.50	$13.55	$16.67	$18.02	$19.36
DPS (net)	$3.90	$4.21	$4.28	$4.39	$4.60	$4.83	$5.07
Pay out ratio (EPS)	35%	45%	165%	167%	93%	82%	74%
Pay out ratio (Adj CEPS)	21%	25%	41%	32%	28%	27%	26%
Tax rate	43%	43%	43%	43%	43%	43%	43%

Cash Flow ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net Income	21,597	19,310	4,883	4,979	9,347	11,105	12,952
DD&A	14,186	16,793	18,282	20,912	21,728	22,240	22,622
Exploration	683	875	1,597	961	1,010	1,038	1,056
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	(133)	(4,963)	(4,975)	(1,252)	(596)	(332)	(54)
Working capital/other	(1,331)	(540)	(2,025)	0	0	0	0
Net cashflow from ops	**35,002**	**31,475**	**17,762**	**25,601**	**31,490**	**34,052**	**36,577**
Disposals	1,143	5,729	5,874	3,000	2,000	3,000	3,000
Shares issued	0	0	0	0	0	0	0
Sources	**36,145**	**37,204**	**23,636**	**28,601**	**33,490**	**37,052**	**39,577**
Capex	(37,985)	(35,407)	(29,959)	(24,735)	(21,118)	(22,094)	(22,763)
Acquisitions	0	0	0	0	0	0	0
Dividends	(7,474)	(7,928)	(8,021)	(8,259)	(8,642)	(9,074)	(9,528)
Shares purchased	(4,494)	(4,412)	0	0	0	0	0
Other	1,134	(262)	21	0	0	0	0
Applications	**(48,819)**	**(48,009)**	**(37,959)**	**(32,994)**	**(29,761)**	**(31,168)**	**(32,291)**
Cash surplus/(deficit)	3,915	14,603	27,285	31,678	27,949	22,066	7,286
FX/other	(16,855)	(25,451)	(41,626)	(36,072)	(24,220)	(16,183)	0
Decrease in net debt	**(12,940)**	**(10,848)**	**(14,342)**	**(4,394)**	**3,729**	**5,883**	**7,286**

Balance Sheet ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net debt	3,915	14,603	27,285	31,678	27,949	22,066	14,781
Equity	149,113	155,028	150,819	145,539	144,243	144,274	145,699
Capital employed	153,028	158,943	178,104	177,217	172,193	166,340	160,479
Net debt/equity	3%	9%	18%	22%	19%	15%	10%
Net debt/Net debt & Equity	2%	8%	15%	18%	16%	13%	9%
NAV	79.2	83.7	94.5	93.8	91.1	88.0	84.9
ROAE	14.4%	11.4%	3.2%	3.4%	6.5%	7.7%	8.9%
ROACE	13.0%	9.8%	2.6%	2.9%	5.3%	6.2%	7.1%

EV Valuation ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Market capitalisation	232,994	229,552	144,273	144,273	144,273	144,273	144,273
Core net debt (inc. associates)	(3,154)	7,177	17,071	23,831	21,359	12,942	2,352
Buy-out of minorities	1,311	1,239	1,193	1,222	1,222	1,222	1,222
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**230,492**	**237,147**	**162,693**	**169,923**	**167,451**	**159,034**	**148,445**
Net income before minorities	21,597	19,310	4,883	4,979	9,347	11,105	12,952
DD&A + exploration	14,869	17,668	19,880	21,874	22,739	23,279	23,679
Other group non-cash items	(133)	(4,963)	(4,975)	(1,252)	(596)	(332)	(54)
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	(488)	(367)	(84)	317	342	223	62
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**35,845**	**31,648**	**19,703**	**25,918**	**31,832**	**34,274**	**36,639**
EV/DACF	**6.4x**	**7.5x**	**8.3x**	**6.6x**	**5.3x**	**4.6x**	**4.1x**

CNOOC

Investment case

While CNOOC has been suffering from low oil prices, the company has so far surprised the market with aggressive capex cuts and operating cost cuts. CNOOC has guided for a capex cut of 26-35% for 2015 and so far in 1H15 has been tracking well with capex down about 31% YoY. This has created better than expected cash flow and dividend payout for the company. Our current estimates, which include Brent crude oil prices ranging from US$55/bbl to US$57.5/bbl in 2015-2016 imply reasonable free cash flow of Rmb0.28/sh to Rmb0.78/sh. This is however dependent on the company sustaining its steep capex cuts. Meanwhile, a weak natural gas demand and price outlook in China could dampen CNOOC's ambitious South China Sea drilling strategy in the medium term. The majority of CNOOC's more promising discoveries of recent years have been in natural gas and typical in either deep water or deep sub-surface conditions.

Financial and Operational Outlook

CNOOC has defended its operations well in the face of low oil prices, in our view. In 1H15, CNOOC lowered capex by 31% YoY, lowered lifting cost by 18% YoY to US$9.6/boe, lowered exploration expense by 17% YoY to US$3.0/boe, and lowered SG&A by 35% YoY to US$1.8/boe. Meanwhile depreciation expense rose by about 15% YoY to US$24/boe. CNOOC targets a 10-15% rise in production this year and a 26-35% cut to capex, and we expect both to be within range of guidance. CNOOC's balance sheet has ramped up from a net cash position in 2012 to 27% net-debt-to-equity by the end of 2014. However, given cost cutting efforts, the fact that CNOOC is coming off the back end of a large ramp up in capex and production, and given what we believe is limited appetite for acquisitions, we think CNOOC will start to de-leverage its balance sheet. However, as CNOOC's overall reserves life (1P) to forward production volume has dropped to 9.2 years while the domestic level has come down to 8 years, we believe any attempt to return to growth after 2015 risks soaking up surplus cash flow.

Upside scenario

Our NAV upside scenario would include a US$90/bbl Brent oil price in the long term (disappointing US tight oil supply, better-than-expected global demand, a rise in geopolitical tensions), no change to Nigeria fiscal terms, and a larger-than-expected recovery of reserves from the historically more profitable Bohai Bay area. The resulting HK$15.2/share NAV estimate would be 17% above our base-case NAV estimate.

Downside scenario

Our downside scenario would imply the Brent crude oil futures strip (slower-than-expected global demand, better-than-expected US tight oil supply, a peaceful world), weak natural gas prices, and slower off-shore reserves recovery in China. The resulting HK$9/share NAV estimate would be 31% below our base-case NAV estimate.

Catalysts

We believe the following are potential catalysts at CNOOC in the next 12 months: 1) China gas price cuts by year-end; 2) continued cost cutting efforts; 3) risk of better than expected production volume growth in 2H15.

Valuation

Our HK$10.4/sh price target is set at a 20% discount to our NAV estimate. Our NAV is based on Wood Mackenzie estimates of commercial reserves (US$80/bbl Brent and 10% WACC).

CNOOC Ltd — Price target: HK$10.4 — Upside: 18% — Buy

Share data			
Mkt cap (HK$ bn)	394.0	% of MSCI EM	0.64%
Mkt cap ($ bn)	50.8	% of MSCI EMF + EAFE	0.13%
Price (HK$)	8.8	% of MSCI Energy	0.87%
12m high	15.6	Daily trading volume (m)	76.52
12m low	7.9	Free float	35.6%
RIC code	0883.HK	Major shareholders: Chinese gov't	64.4%
Bloomberg code	883 HK	Vanguard	1.0%
ADR ratio	1	Blackrock	1.0%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	1121	1177	1330	1356	1361	1351	1418
Growth	18%	5%	13%	2%	0%	-1%	5%
Oil production (000 bbl/d)	913	956	1088	1090	1078	1065	1123
Growth	19%	5%	14%	0%	-1%	-1%	5%
Gas production (000 mcf/d)	1248	1330	1450	1600	1694	1713	1771
Growth	13%	7%	9%	10%	6%	1%	3%

Profit & Loss (Rmb m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**98.02**	**92.89**	**49.00**	**52.50**	**65.00**	**70.00**	**75.00**
Rmb/$	**6.15**	**6.25**	**6.40**	**6.60**	**6.80**	**6.80**	**6.80**
E&P Revenues	226,445	218,210	155,044	168,185	204,630	217,564	242,526
Other Revenues	59,412	56,424	30,266	31,528	37,839	40,363	42,887
Total Revenues	**285,857**	**274,634**	**185,311**	**199,713**	**242,469**	**257,927**	**285,413**
Costs	(86,561)	(86,381)	(57,398)	(60,868)	(68,742)	(72,591)	(76,667)
Admin, G&A	(7,859)	(6,613)	(5,601)	(5,828)	(5,964)	(6,040)	(6,468)
Royalties	(39,358)	(30,914)	(10,655)	(11,246)	(15,231)	(18,367)	(21,974)
DD&A	(56,456)	(58,286)	(76,095)	(80,047)	(82,748)	(82,151)	(86,247)
Exploration expense	(17,120)	(11,525)	(10,871)	(11,435)	(11,821)	(11,736)	(12,321)
Adj Operating Income	**78,502**	**80,914**	**24,691**	**30,288**	**57,962**	**67,042**	**81,736**
Other income & Associates	3,840	4,250	3,700	3,700	3,700	3,700	3,700
Net interest	(1,492)	(2,652)	(5,312)	(5,666)	(4,858)	(3,796)	(3,247)
Pre-tax profit	**80,850**	**82,512**	**23,079**	**28,322**	**56,804**	**66,946**	**82,189**
Tax	(24,390)	(22,314)	(1,163)	(7,387)	(15,931)	(18,974)	(23,547)
Minorities	0	0	0	0	0	0	0
Adj Net income	**56,460**	**60,198**	**21,916**	**20,935**	**40,873**	**47,972**	**58,442**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	44,772	44,772	44,772	44,772	44,772	44,772	44,772
EPS	1.26	1.34	0.49	0.47	0.91	1.07	1.31
Adj EPS	1.26	1.34	0.49	0.47	0.91	1.07	1.31
Adj CEPS	2.52	2.65	2.19	2.26	2.76	2.91	3.24
DPS (net)	0.57	0.57	0.34	0.16	0.32	0.37	0.46
Adj EPS/ADR	$0.20	$0.22	$0.08	$0.07	$0.13	$0.16	$0.19
Adj CEPS/ADR	$0.41	$0.42	$0.34	$0.34	$0.41	$0.43	$0.48
DPS (net)/ADR	$0.09	$0.09	$0.05	$0.02	$0.05	$0.06	$0.07
Pay out ratio (EPS)	45%	42%	69%	35%	35%	35%	35%
Pay out ratio (Adj CEPS)	23%	21%	15%	7%	12%	13%	14%
Tax rate	30%	27%	5%	26%	28%	28%	-0%

Cash Flow (Rmb m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	56,460	60,198	21,916	20,935	40,873	47,972	58,442
DD&A	56,456	58,286	76,095	80,047	82,748	82,151	86,247
Exploration	0	0	0	0	0	0	0
Associate income	0	0	0	0	0	0	0
Other non-cash items	10,854	3,369	(21,151)	6,224	8,545	3,043	4,773
Working capital/other	3,576	(410)	(11,225)	187	2,468	1,845	642
Net cashflow from ops	**127,346**	**121,443**	**65,635**	**107,394**	**134,634**	**135,011**	**150,105**
Disposals	0	0	0	0	0	0	0
Shares issued	0	0	0	0	0	0	0
Sources	127,346	121,443	65,635	107,394	134,634	135,011	150,105
Capex	(90,900)	(107,100)	(76,997)	(75,891)	(87,289)	(90,274)	(94,079)
Acquisitions	(94,224)	0	0	0	0	0	0
Dividends	(20,226)	(20,216)	(25,449)	(7,504)	(10,717)	(15,512)	(18,604)
Shares purchased	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Applications	(205,350)	(127,316)	(102,446)	(83,395)	(98,005)	(105,787)	(112,683)
Cash surplus/(deficit)	(78,004)	(5,873)	(36,811)	23,999	36,628	29,224	37,421
FX/other	(27,340)	(1,621)	(0)	0	0	0	(2,962)
Decrease in net debt	(105,344)	(7,494)	(36,811)	23,999	36,628	29,224	34,460

Balance Sheet	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	91,316	98,810	135,621	111,622	74,993	45,769	11,310
Equity	336,382	369,505	365,972	379,404	409,560	442,020	482,058
Capital employed	427,698	468,315	501,593	491,025	484,553	487,789	493,367
Net debt/equity	27%	27%	37%	29%	18%	10%	2%
Net debt/Net debt & Equity	21%	21%	27%	23%	15%	9%	2%
NAV	9.6	10.5	11.2	11.0	10.8	10.9	11.0
ROAE	17.4%	17.1%	6.0%	5.6%	10.4%	11.3%	12.6%
ROACE	15.6%	13.4%	4.5%	4.2%	8.4%	9.9%	11.9%

EV Valuation (Rmb m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	527,685	458,622	322,214	322,214	322,214	322,214	322,214
Core net debt (inc. associates)	91,316	98,810	135,621	111,622	74,993	45,769	11,310
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**619,001**	**557,432**	**457,835**	**433,836**	**397,208**	**367,984**	**333,524**
Net income before minorities	56,460	60,198	21,916	20,935	40,873	47,972	58,642
DD&A + exploration	73,576	69,811	86,966	91,483	94,569	93,887	98,568
Other group non-cash items	0	(0)	(0)	0	0	(0)	(0)
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	(435)	(691)	(214)	(1,421)	(1,314)	(1,038)	(898)
less: peripheral income/cash flow	(334)	(560)	(200)	(200)	(200)	(200)	(200)
DACF	**129,267**	**128,758**	**108,468**	**110,797**	**133,928**	**140,621**	**156,113**
EV/DACF	**4.8x**	**4.3x**	**4.2x**	**3.9x**	**3.0x**	**2.6x**	**2.1x**
EV/DACF ($)	**4.8x**	**4.3x**	**4.2x**	**3.9x**	**3.0x**	**2.6x**	**2.1x**

Concho Resources

Investment Case

As one of the early movers in the Permian Delaware Basin, CXO continues to see improving capital efficiency as it combines enhanced well completion techniques with captured service cost reductions. Our proved and probable NAV largely reflects the strong Northern Delaware Basin asset performance, increased horizontal drilling inventory and de-risking of new exploratory plays in the Southern Delaware Basin and Midland Basin. Meanwhile, the company continues to preserve a strong balance sheet amidst lower oil prices. However, we believe CXO's rich valuation already reflects the improvements in capital efficiency and large unbooked resource inventory. We rate it Neutral with a $115 price target.

Financial and Operational Outlook

As a result of the reduced spending in 2H15, CXO expects a flat production profile for the remainder of the year with growth resuming in 2016 as it executes a drilling program that's targeted within cash flow. And while the company preliminarily expects a lower capex budget next year relative to 2015 spending levels, it believes it can still grow volumes and operating cash flow in 2016 given strong recent well results from utilizing enhanced completion designs. Assuming a 15% YoY reduction in capex to $1.7 billion in capex next year (consensus is also $1.7 billion), we forecast an 8% increase in production and modest $230 million deficit at the current futures strip.

Upside Scenario

In addition to oil price appreciation, our upside scenario involves: 1) superior execution leading to better than expected debt-adjusted production and cash flow growth; 2) meaningful upward revision to EUR forecasts in Northern Delaware Basin driving higher NAV; and 3) further increase in horizontal inventory in both Delaware and Midland Basin. Under this scenario, we could see CXO's multiple expand to 7.5x normalized EBITDX, or $132/share and a healthy 1.2x NAV.

Downside Scenario

In addition to downward oil price movements, our downside case scenario assumes: 1) material cost and capex escalation as CXO shifts to horizontal development in areas lacking infrastructure; 2) midstream and takeaway infrastructure constraints limit production growth and 3) an increase in rig activities in the Permian drives up service costs, hurting well economics;. Under this scenario, we could see CXO's multiple contract to 0.8x NAV, or ~$88/share.

Catalysts

Results from new completion tests, downspacing, and additional horizontal delineation in the Delaware Basin

2H15: Alpha Crude Connector midstream start-up

Valuation

CXO is trading at a premium to oily resource peers on P/NAV and albeit in line on EV/EBITDX. Our price target of $115 is based on 7.0x normalized 2016E EBITDX.

Concho | Price target: $115 | Upside: 10% | Neutral

Share data				
Mkt cap ($ bn)	12.6	% MSCI World		0.03%
Mkt cap ($ bn)	12.6	Daily trading volume (m)		0.28
Price ($)	104.5	Free float		97.4%
12m high	135.72	Major shareholders	Capital World	9.9%
12m low	83.01		Capital Research	9.0%
RIC code	CXO.N		Jennison Associates	7.6%
Bloomberg code	CXO US			

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	92	112	142	154	169	186	205
Growth	13%	22%	27%	8%	10%	10%	10%
Oil production (000 bbl/d)	58	72	96	103	114	125	137
Growth	18%	25%	33%	8%	10%	10%	10%
Gas production (000 mcf/d)	206	239	281	303	333	367	403
Growth	7%	16%	17%	8%	10%	10%	10%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	98.02	92.89	49.00	52.50	65.00	70.00	75.00
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	2,320	2,660	1,832	2,191	2,947	3,487	4,069
Other Revenues	(32)	72	651	419	(3)	0	0
Total Revenues	**2,288**	**2,732**	**2,483**	**2,610**	**2,944**	**3,487**	**4,069**
Costs	(461)	(545)	(551)	(639)	(745)	(839)	(941)
Admin, G&A	(170)	(204)	(252)	(273)	(299)	(329)	(362)
DD&A	(773)	(980)	(1,195)	(1,294)	(1,420)	(1,562)	(1,718)
Exploration expense	(59)	(67)	(84)	(91)	(99)	(109)	(120)
Adj Operating Income	**825**	**935**	**402**	**314**	**381**	**648**	**928**
Other income & Associates	0	(2)	(9)	(2)	(2)	2	(4)
Net interest	(219)	(217)	(214)	(225)	(236)	(236)	(236)
Pre-tax profit	**606**	**716**	**179**	**87**	**143**	**414**	**688**
Tax	(237)	(273)	(66)	(33)	(52)	(159)	(266)
Minorities	0	0	0	0	0	0	0
Other	(0)	0	(0)	0	0	0	0
Adj Net income	**369**	**443**	**113**	**54**	**91**	**255**	**422**
Special items	0	0	0	0	0	0	0
Rep Net income	**369**	**443**	**113**	**54**	**91**	**255**	**422**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	104	110	118	121	121	122	122
EPS	$3.54	$4.03	$0.95	$0.45	$0.75	$2.10	$3.45
Adj EPS	$3.54	$4.03	$0.95	$0.45	$0.75	$2.10	$3.45
Adj CEPS	$13.93	$16.31	$12.55	$12.80	$14.30	$17.60	$21.00
DPS (net)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pay out ratio (EPS)	0%	0%	0%	0%	0%	0%	0%
Pay out ratio (Adj CEPS)	0%	0%	0%	0%	0%	0%	0%
Tax rate	39%	38%	37%	38%	37%	38%	39%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	251	538	(88)	54	91	255	422
DD&A	773	980	1,195	1,294	1,420	1,562	1,718
Exploration	81	265	82	91	99	109	120
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	341	(66)	29	107	128	217	313
Working capital/other	(84)	(43)	39	0	0	0	0
Net cashflow from ops	**1,362**	**1,674**	**1,256**	**1,546**	**1,738**	**2,143**	**2,572**
Disposals	15	1	0	0	0	0	0
Shares issued	3	937	763	6	6	7	7
Sources	**1,380**	**2,612**	**2,019**	**1,551**	**1,744**	**2,150**	**2,580**
Capex	(1,880)	(2,589)	(2,184)	(1,734)	(1,989)	(2,380)	(2,662)
Acquisitions	0	0	(26)	0	0	0	0
Dividends	0	0	0	0	0	0	0
Shares purchased	0	0	0	0	0	0	0
Other	1	46	(13)	0	0	0	0
Applications	**(1,879)**	**(2,543)**	**(2,222)**	**(1,734)**	**(1,989)**	**(2,380)**	**(2,662)**
Cash surplus/(deficit)	(498)	69	(204)	(183)	(246)	(231)	(82)
FX/other	14	42	277	0	0	0	0
Decrease in net debt	**(484)**	**110**	**73**	**(183)**	**(246)**	**(231)**	**(82)**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	3,866	3,756	3,683	3,866	4,112	4,342	4,424
Equity	3,758	5,281	6,018	6,148	6,322	6,669	7,191
Capital employed	7,624	9,037	9,701	10,014	10,434	11,011	11,616
Net debt/equity	103%	71%	61%	63%	65%	65%	62%
Net debt/Net debt & Equity	51%	42%	38%	39%	39%	39%	38%
NAV	73.0	82.1	82.1	82.9	86.1	90.4	95.0
ROAE	16.2%	15.4%	2.4%	1.4%	2.1%	5.8%	9.1%
ROACE	10.3%	10.2%	2.9%	2.3%	2.8%	4.9%	6.9%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	9,866	13,215	12,288	12,510	12,563	12,615	12,667
Core net debt (inc. associates)	3,624	3,811	3,719	3,774	3,989	4,227	4,383
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**13,490**	**17,026**	**16,007**	**16,285**	**16,551**	**16,842**	**17,050**
Net income before minorities	369	443	113	54	91	255	422
DD&A + exploration	831	1,047	1,279	1,385	1,519	1,671	1,838
Other group non-cash items	254	306	145	257	265	359	453
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	211	210	109	64	79	74	72
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**1,666**	**2,006**	**1,645**	**1,759**	**1,954**	**2,359**	**2,784**
EV/DACF	**8.1x**	**8.5x**	**9.7x**	**9.3x**	**8.5x**	**7.1x**	**6.1x**

ConocoPhillips

Investment Case

While its much lower 2015 capex budget should still enable it to deliver 2-3% volume growth this year, we believe COP's material free cash flow deficits effectively eliminate its ability to deliver competitive longer-term volume growth, particularly beyond 2017. And though we see scope for COP to deliver on its goal of reaching cash flow neutrality by 2017, we believe achieving this target will rely on a Brent oil price recovery to ~$75/Bbl in a growth scenario or $65/Bbl in a no growth scenario, as well as require the company to lever-up the balance sheet from 25% net debt/cap at YE14 to ~43% by YE17. Our $49 price target assumes 6.4x normalized 2016E DACF.

Financial and Operational Outlook

While it will not provide formal 2016 capex guidance until later this year, COP has indicated spending would likely be lower than the $11 billion this year if oil prices remain at current levels and highlighted that its maintenance capex level has declined from $9 billion to $8 billion. Notably, COP now believes it can achieve cash flow neutrality by 2017 via two paths: 1) hunkering down with $8 billion in capex and keeping production flat if oil prices remain weak; or 2) growing production to 1.7 MMBoed by 2017 with an annual spend of ~$11 billion assuming Brent eventually recovers to $75/Bbl. However, in the growth scenario, we continue to believe COP would need $80/Bbl Brent to achieve cash flow neutrality. And assuming $60/Bbl, we estimate COP could generate $10.5-$11 billion in cash flow, prompting a $0.5-$1.0 billion free cash flow deficit after capex and the dividend.

Upside Scenario

Our upside scenario assumes a faster than expected oil price recovery, leaving COP room to either narrow its free cash flow deficit or increase activity levels, supporting better longer-term growth. Under this scenario, we could see COP re-rating to 7.0x 2016E normalized DACF, a full turn above its historical average and implying a value of ~$57/share. We estimate a $0.50/MMBtu increase in natural gas prices and a $5.00/Bbl rise in crude prices would boost our upside valuation to ~$62/share.

Downside Scenario

Our downside scenario assumes sustained oil price weakness, prompting increasingly wider free cash flow deficits and potentially prompting COP to cut its dividend. Under this scenario, we could see COP’s multiple declining to a lower growth multiple of 4.5x 2016E DACF, or $30/share.

Catalysts

3Q15: Major project start-up at APLNG

Throughout 2015: results from exploration wells in the GoM, Angola & Colombia

December: disclosure of 2016 capital expenditure budget

April 2016 Analyst Day: Disclosure of 3-year capex budget and growth targets

Valuation

COP appears full valued vs. peers on EV/DACF. Our $49 price target assumes 6.4x normalized 2016E EV/DACF.

ConocoPhillips Price target: $49 Upside: 4% Neutral

Share data				
Mkt cap ($ bn)	58.2	% of S&P 500		0.55%
Mkt cap ($ bn)	58.2	Daily trading volume (m)		2.30
Price ($)	47.2	Free float		100.0%
12m high	80.75	Major shareholders	Vanguard Group	6.0%
12m low	42.19		BlackRock Advisors	4.3%
RIC code	COP.N		Ssga Funds Mgmt.	4.2%
Bloomberg code	COP US			

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	1501	1540	1580	1651	1709	1754	1746
Growth	-5%	3%	3%	4%	4%	3%	0%
Oil production (000 bbl/d)	845	883	921	977	1040	1110	1128
Growth	-3%	4%	4%	6%	6%	7%	2%
Gas production (000 mcf/d)	3939	3943	3952	4038	4017	3861	3712
Growth	-7%	0%	0%	2%	-1%	-4%	-4%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	98.02	92.89	49.00	52.50	65.00	70.00	75.00
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	38,118	36,076	20,400	23,286	28,873	31,938	33,835
Other Revenues	23	23	23	23	23	23	23
Total Revenues	**38,141**	**36,099**	**20,423**	**23,309**	**28,896**	**31,961**	**33,858**
Costs	(13,678)	(13,306)	(12,472)	(12,497)	(13,444)	(14,021)	(14,239)
Admin, G&A	(282)	(501)	(371)	(210)	30	3	(130)
DD&A	(7,411)	(8,298)	(8,875)	(9,001)	(9,536)	(10,054)	(10,332)
Exploration expense	(1,232)	(2,045)	(1,282)	(1,526)	(1,550)	(1,576)	(1,602)
Adj Operating Income	**15,538**	**11,949**	**(2,576)**	**75**	**4,397**	**6,313**	**7,555**
Other income & Associates	0	0	339	400	367	367	367
Net interest	(612)	(648)	(846)	(1,210)	(1,414)	(1,527)	(1,719)
Pre-tax profit	**14,926**	**11,301**	**(3,083)**	**(735)**	**3,349**	**5,153**	**6,202**
Tax	(6,468)	(3,652)	1,080	(12)	(1,562)	(2,248)	(2,682)
Minorities	59	69	0	0	0	0	0
Other	(1,456)	(1,109)	575	0	0	0	0
Adj Net income	**7,061**	**6,609**	**(1,428)**	**(747)**	**1,788**	**2,905**	**3,521**
Special items	917	(871)	234	0	0	0	0
Rep Net income	**7,978**	**5,738**	**(1,194)**	**(747)**	**1,788**	**2,905**	**3,521**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	1,239	1,244	1,238	1,235	1,235	1,235	1,235
EPS	$5.74	$5.34	($1.15)	($0.61)	$1.45	$2.36	$2.85
Adj EPS	$5.70	$5.31	($1.15)	($0.60)	$1.45	$2.35	$2.85
Adj CEPS	$11.83	$13.60	$6.15	$7.30	$10.10	$11.70	$12.65
DPS (net)	$2.70	$2.84	$2.94	$3.04	$3.20	$3.36	$3.53
Pay out ratio (EPS)	47%	53%	NA	-503%	221%	143%	124%
Pay out ratio (Adj CEPS)	23%	21%	48%	42%	32%	29%	28%
Tax rate	41%	35%	38%	-2%	47%	44%	43%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	9,215	6,938	(1,194)	(747)	1,788	2,905	3,521
DD&A	7,434	8,329	8,903	9,031	9,566	10,084	10,362
Exploration	443	1,166	836	797	798	817	832
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	(1,339)	664	(935)	(63)	315	635	907
Working capital/other	48	(505)	(389)	0	0	0	0
Net cashflow from ops	**15,801**	**16,592**	**7,221**	**9,018**	**12,466**	**14,440**	**15,621**
Disposals	10,220	1,603	794	1,000	1,000	1,000	1,000
Shares issued	20	35	(46)	0	0	0	0
Sources	**26,041**	**18,230**	**7,969**	**10,018**	**13,466**	**15,440**	**16,621**
Capex	(15,537)	(17,085)	(11,190)	(10,490)	(10,490)	(13,190)	(15,190)
Acquisitions	(263)	253	0	0	0	0	0
Dividends	(3,334)	(3,525)	(3,645)	(3,750)	(3,945)	(4,142)	(4,349)
Shares purchased	0	0	0	0	0	0	0
Other	(1,917)	(889)	(113)	0	0	0	0
Applications	**(21,051)**	**(21,246)**	**(14,948)**	**(14,240)**	**(14,435)**	**(17,332)**	**(19,539)**
Cash surplus/(deficit)	4,990	(3,016)	(6,979)	(4,222)	(968)	(1,891)	(2,918)
FX/other	(7,945)	1,343	685	0	(0)	(0)	0
Decrease in net debt	**(2,955)**	**(1,673)**	**(6,294)**	**(4,222)**	**(968)**	**(1,891)**	**(2,918)**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	17,179	18,852	25,146	29,367	30,336	32,227	35,145
Equity	52,090	51,911	45,557	41,106	39,019	37,892	37,164
Capital employed	69,269	70,763	70,703	70,473	69,354	70,119	72,308
Net debt/equity	33%	36%	55%	71%	78%	85%	95%
Net debt/Net debt & Equity	25%	27%	36%	42%	44%	46%	49%
NAV	55.9	56.9	57.1	57.1	56.2	56.8	58.6
ROAE	13.6%	12.7%	-3.1%	-1.8%	4.6%	7.7%	9.5%
ROACE	14.2%	12.8%	-1.4%	0.4%	5.1%	7.1%	8.0%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	79,571	91,794	58,395	58,219	58,219	58,219	58,219
Core net debt (inc. associates)	15,702	18,016	21,999	27,257	29,851	31,281	33,686
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**95,272**	**109,809**	**80,394**	**85,476**	**88,071**	**89,501**	**91,905**
Net income before minorities	9,375	6,778	(1,769)	(747)	1,788	2,905	3,521
DD&A + exploration	8,643	10,343	10,156	10,526	11,086	11,630	11,934
Other group non-cash items	(3,892)	(689)	(1,499)	(722)	(1,726)	(1,427)	(1,321)
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	862	875	1,166	1,190	2,074	2,193	2,463
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**14,988**	**17,307**	**8,054**	**10,248**	**13,221**	**15,301**	**16,597**
EV/DACF	**6.4x**	**6.3x**	**10.0x**	**8.3x**	**6.7x**	**5.8x**	**5.5x**

Continental Resources

Investment Case

Continental Resource's operational scale and technical expertise should drive continued efficiency gains across its core Bakken/Three Forks developments, while ramp-up of its SCOOP/STACK plays will set the stage for longer-term growth and provide opportunity for further resource expansion. Nonetheless, with shares trading at ~0.8x NAV (vs. Bakken peers' ~0.67x), CLR's valuation appears to already reflect its superior cash flow per debt-adjusted share growth (+14% in 2015-19E vs. peers' +4%), high-quality asset base.

Financial and Operational Outlook

Following 2Q production results, CLR raised 2015 growth guidance to +19-23% (207-214 MBoed). However, management notes that volumes will likely taper from its 2Q peak given a slowdown in completion activity & lower rig count. CLR sees volumes exiting the year (12/31, not 4Q/4Q) at ~210-215 MBoed, +6% YoY vs. its comparable 2014 exit rate of ~200 MBoed & consistent with prior expectations that it would demonstrate "mid-single digit" growth heading into 2016. And although CLR maintained its 2015 capex guidance of $2.7 billion, it remains on pace to come in ~$150 million under-budget for the full year. Looking to 2016, CLR expects to set its capital program at a level that roughly tracks cash flow.

Upside Scenario

In addition to oil price appreciation, our upside scenario involves our upside case scenario assumes its Bakken/Three Forks or SCOOP development programs lead to an upward revision production growth, and/or successful derisking of Lower Three Forks potential across the majority of its acreage position. Under this scenario, we could see Continental's multiple expanding to ~0.95x our current NAV, which implies a share price of $35/share. Assuming oil and gas prices increase by $5/Bbl and $0.50/MMBtu from our current forecast level, our upside valuation would increase to $45/share.

Downside Scenario

In addition to downward oil price movements our downside case scenario assumes that disappointing execution, unplanned downtime or adverse weather condition in the Williston Basin or SCOOP lead to a downward revision to production growth. Uneconomical Lower Three Forks performance on a large portion of the acreage or inter-zones well communication could also dampen enthusiasm for resource upside. Under this scenario, we could see Continental's multiple compress to ~0.65x NAV, implying a downside valuation of $24/share. Assuming oil and gas prices decrease by $5/Bbl and $0.50/MMBtu from our current forecast level, our downside valuation would decline to $17/share.

Catalysts

Results from its density spacing pilots

Performance updates from the Springer Shale Formation

Valuation

CLR is trading at a premium vs. Bakken and oily E&P peers. Our $32 price target is based on ~0.9x 2P NAV.

Continental Price target: $32 Upside: 4% Neutral

Share data			
Mkt cap ($ bn)	11.5	% of MSCI World	0.01%
Mkt cap ($ bn)	11.5	Daily trading volume (m)	0.78
Price ($)	30.7	Free float	23.6%
12m high	79.13	Major shareholders Fidelity M&R	2.2%
12m low	26.39	T. Rowe Price	1.5%
RIC code	CLR.N	Vanguard Group	1.1%
Bloomberg code	CLR US		

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	136	174	216	228	245	267	295
Growth	39%	28%	24%	5%	7%	9%	10%
Oil production (000 bbl/d)	96	122	145	152	160	171	186
Growth	40%	27%	19%	5%	5%	7%	9%
Gas production (000 mcf/d)	240	313	429	458	511	575	652
Growth	38%	30%	37%	7%	12%	12%	13%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	98.02	92.89	49.00	52.50	65.00	70.00	75.00
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	3,607	4,203	2,532	2,981	4,081	4,832	5,701
Other Revenues	(62)	385	58	46	(10)	0	0
Total Revenues	**3,545**	**4,588**	**2,590**	**3,027**	**4,070**	**4,832**	**5,701**
Costs	(614)	(702)	(605)	(649)	(767)	(867)	(986)
Admin, G&A	(143)	(185)	(218)	(226)	(243)	(264)	(292)
DD&A	(966)	(1,359)	(1,672)	(1,764)	(1,895)	(2,064)	(2,279)
Exploration expense	(35)	(50)	(46)	(49)	(52)	(57)	(63)
Adj Operating Income	**1,787**	**2,293**	**48**	**340**	**1,114**	**1,581**	**2,081**
Other income & Associates	13	20	20	22	19	19	19
Net interest	(235)	(284)	(306)	(307)	(313)	(324)	(358)
Pre-tax profit	**1,565**	**2,028**	**(238)**	**55**	**820**	**1,276**	**1,743**
Tax	(579)	(757)	87	(19)	(312)	(485)	(666)
Minorities	0	0	0	0	0	0	0
Other	(0)	0	(0)	0	0	0	0
Adj Net income	**986**	**1,271**	**(151)**	**36**	**508**	**791**	**1,077**
Special items	0	0	0	0	0	0	0
Rep Net income	**986**	**1,271**	**(151)**	**36**	**508**	**791**	**1,077**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	370	370	373	374	375	376	377
EPS	$2.67	$3.43	($0.40)	$0.10	$1.35	$2.10	$2.85
Adj EPS	$2.67	$3.43	($0.40)	$0.10	$1.35	$2.10	$2.85
Adj CEPS	$7.02	$9.43	$4.15	$5.15	$7.55	$9.20	$11.00
DPS (net)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pay out ratio (EPS)	0%	0%	0%	0%	0%	0%	0%
Pay out ratio (Adj CEPS)	0%	0%	0%	0%	0%	0%	0%
Tax rate	37%	37%	37%	35%	38%	38%	38%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	764	977	(297)	36	508	791	1,077
DD&A	965	1,368	1,671	1,764	1,895	2,064	2,279
Exploration	9	24	40	49	52	57	63
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	835	1,113	132	81	378	551	733
Working capital/other	(11)	(127)	9	0	0	0	0
Net cashflow from ops	**2,563**	**3,356**	**1,555**	**1,930**	**2,833**	**3,463**	**4,152**
Disposals	28	129	33	0	0	0	0
Shares issued	0	0	0	0	0	0	0
Sources	**2,592**	**3,485**	**1,587**	**1,930**	**2,833**	**3,463**	**4,152**
Capex	(3,661)	(4,604)	(2,987)	(2,100)	(2,625)	(3,150)	(3,780)
Acquisitions	(79)	(112)	(23)	0	0	0	0
Dividends	0	0	0	0	0	0	0
Shares purchased	0	0	0	0	0	0	0
Other	(17)	(44)	(7)	0	0	0	0
Applications	**(3,756)**	**(4,761)**	**(3,017)**	**(2,100)**	**(2,625)**	**(3,150)**	**(3,780)**
Cash surplus/(deficit)	(1,165)	(1,276)	(1,434)	(170)	208	313	372
FX/other	(158)	(243)	513	0	0	0	0
Decrease in net debt	**(1,323)**	**(1,519)**	**(921)**	**(170)**	**208**	**313**	**372**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	5,040	6,558	7,480	7,650	7,442	7,128	6,756
Equity	3,953	4,968	4,728	4,826	5,407	6,274	7,432
Capital employed	8,993	11,526	12,208	12,476	12,849	13,403	14,189
Net debt/equity	127%	132%	158%	158%	138%	114%	91%
Net debt/Net debt & Equity	56%	57%	61%	61%	58%	53%	48%
NAV	24.3	31.1	32.7	33.3	34.2	35.6	37.6
ROAE	43.7%	45.5%	-4.9%	1.1%	15.9%	21.7%	25.2%
ROACE	22.2%	22.5%	-0.4%	2.1%	8.0%	11.3%	14.3%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	17,297	23,091	11,443	11,473	11,503	11,532	11,562
Core net debt (inc. associates)	4,378	5,799	7,019	7,565	7,546	7,285	6,942
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**21,675**	**28,890**	**18,462**	**19,037**	**19,048**	**18,817**	**18,505**
Net income before minorities	986	1,271	(151)	36	508	791	1,077
DD&A + exploration	1,001	1,409	1,719	1,813	1,947	2,121	2,342
Other group non-cash items	609	812	(19)	81	494	672	867
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	234	284	303	305	194	201	221
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**2,829**	**3,775**	**1,851**	**2,235**	**3,144**	**3,785**	**4,507**
EV/DACF	**7.7x**	**7.7x**	**10.0x**	**8.5x**	**6.1x**	**5.0x**	**4.1x**

Crescent Point

Investment Case

While CPG offers a desirable combination of a strong balance sheet, significant hedges, and attractive yield, we see lower growth and increased execution risk over the coming years which we believe warrants a discounted valuation to the group. The erosion of its valuation premium places increased importance on organic growth. As a result, the outlook is increasingly reliant on successful derisking of its emerging plays (Flat Lake and the Uinta) and/or substantially higher oil prices. Moreover, we see limited running room remaining in CPG's low cost Viewfield core, which has been the primary source of free cash flow in recent years. While other plays such as the company's conventional assets or its Viking acreage are c. We rate CPG Neutral with a Price Target of $18, or 8.1x normalized 2016E DACF.

Financial and Operational Outlook

CPG is in good financial shape with forecasted 2015E Net Debt/Capitalization of 27% and Net Debt/Cash Flow of 2.2x. Importantly, the company has ample liquidity and remains well bleow its main debt covenants. We estimate that 2016 cash neutrality is achieved at $52/bbl, aided by an attractive hedging program, and estimate the company requires $55/bbl WTI to fund its sustaining capital and dividend on a permenant basis. We estimate Net Debt/Cap peaks in 2016 at 29%. Looking forward, we expect capital spending to rise slighty from $1.5 bn in 2015 to $1.6 bn in 2018, as rising commodity prices offset lower hedging gains, and 5-year production growth (2015-2020) of 3.5%.

Upside Scenario

Our upside case assumes CPG is able to generate better than expected production growth from its current asset base, enabling the company to beat our 2015E-2018E production CAGR estimate of 6%. As a result the company's average 2015-2018 debt adjusted cash flow per share growth increases, and we raise our target multiple by 1.0x to 9.1x. Assuming this multiple – and a $0.50/MMBtu increase in natural gas prices and a $5.00/Bbl increase WTI prices – implies upside to ~$29/share.

Downside Scenario

Our downside case assumes CPG is unable to generate expected production growth from its current asset base, falling short of our 2015E-2018E production CAGR estimate of 6%. As a result the company's average 2015-2018 debt adjusted cash flow per share growth decreases, and we lower our target multiple by 1.0x to 7.1x. Assuming this multiple – and a $0.50/MMBtu increase in natural gas prices and a $5.00/Bbl increase WTI prices – implies upside to ~$10/share.

Catalysts

2015 Quarterly results: We believe there is downside to the company's capital spending guidance and cost guidance

2015 Further results from its emerging Flat Lake play

2015 Further results from its Uinta horizontal drilling program

Valuation

At 6.4x 2016E DACF, CPG trades a 19% discount to the Canadian E&P peer group, reflecting lower forecasted DACFPS. Historically, the company has supplemented organic growth with acquisitions, however with no equity premium we expect this to be much less significant going forward. Our price target of $18 is based on 8.1x our 2016E DACF, a 12% discount to the peer group, reflecting lower than average forecasted DACFPS growth as well as lower expected inorganic growth. Notably, the company offers an attractive yield of 7% which we believe can be funded along with sustaining capital above $55/bbl WTI. This should provide near term support in the context of significant hedging.

Crescent Point | Price target: $18 | Upside: 8% | Neutral

Share data				
Mkt cap ($ bn)	7.4	% of TSX 60		0.54%
Mkt cap ($ bn)	5.6	% of MSCI Energy		0.24%
Price ($)	16.6	Daily trading volume (m)		2.44
12m high	43.09	Free float		99.5%
12m low	12.65	Major shareholders	RBC	5.5%
RIC code	CPG.TO		Capital Group	4.9%
Bloomberg code	CPG CN		CIBC	3.2%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	120	141	164	172	177	182	290
Growth	22%	17%	16%	5%	3%	3%	4%
Oil production (000 bbl/d)	109	128	149	156	161	166	172
Growth	22%	17%	16%	5%	3%	3%	4%
Gas production (000 mcf/d)	67	74	89	93	96	98	102
Growth	23%	11%	20%	5%	3%	3%	4%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**98.02**	**92.89**	**49.00**	**52.50**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	3,526	4,210	2,759	3,218	3,859	4,080	4,593
Other Revenues	0	0	0	0	0	0	0
Total Revenues	**3,526**	**4,210**	**2,759**	**3,218**	**3,859**	**4,080**	**4,593**
Costs	(885)	(80)	(572)	(637)	(944)	(1,006)	(1,062)
Admin, G&A	(67)	(92)	(101)	(94)	(97)	(100)	(104)
Royalties	(644)	(750)	(436)	(515)	(695)	(734)	(827)
DD&A	(1,559)	(2,223)	(1,754)	(1,823)	(1,873)	(1,929)	(2,006)
Operating Profit	**371**	**1,066**	**(105)**	**148**	**250**	**311**	**594**
Other income & Associates	(10)	(24)	(16)	(53)	(13)	(13)	(13)
Net interest	(142)	(228)	(239)	(173)	(166)	(171)	(179)
EBT	**218**	**813**	**(360)**	**(77)**	**71**	**127**	**402**
Tax	(74)	(304)	50	27	(25)	(45)	(141)
Minorities	0	0	0	0	0	0	0
Rep Net income	**145**	**509**	**(310)**	**(50)**	**46**	**83**	**261**
Special items	414	38	355	0	0	(0)	0
Adj Net income	**558**	**547**	**45**	**(50)**	**46**	**83**	**261**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	388	421	480	506	507	508	509
EPS	$0.37	$1.21	($0.65)	($0.10)	$0.09	$0.16	$0.51
Adj EPS	$1.44	$1.30	$0.09	($0.10)	$0.09	$0.16	$0.51
Adj CEPS	$5.23	$5.61	$3.93	$3.67	$3.98	$4.19	$4.87
DPS (net)	$2.76	$2.76	$2.24	$1.20	$1.20	$1.20	$1.20
Pay out ratio (EPS)	76%	153%	1827%	n/m	1305%	734%	233%
Pay out ratio (Adj CEPS)	21%	35%	44%	33%	30%	28%	24%
Tax rate	34%	37%	14%	35%	35%	35%	35%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	145	509	(310)	(50)	46	83	261
DD&A	1,559	2,223	1,754	1,823	1,873	1,929	2,006
Deferred Taxes	73	304	(50)	(27)	25	45	141
Other non-cash items	253	(679)	487	113	73	73	73
Working capital	(57)	99	(50)	0	0	0	0
Net cashflow from ops	**1,973**	**2,456**	**1,831**	**1,859**	**2,017**	**2,129**	**2,481**
Disposals	0	0	0	0	0	0	0
Shares issued	(1)	765	632	0	0	0	0
Sources	**1,972**	**3,221**	**2,463**	**1,859**	**2,017**	**2,129**	**2,481**
Capex	(1,747)	(2,169)	(1,526)	(1,469)	(1,585)	(1,739)	(1,907)
Acquisitions	(127)	(846)	(17)	0	0	0	0
Dividends	(422)	(835)	(826)	(604)	(606)	(607)	(608)
Other	136	(103)	(107)	(8)	(8)	(8)	(8)
Applications	**(2,160)**	**(3,952)**	**(2,476)**	**(2,081)**	**(2,199)**	**(2,353)**	**(2,523)**
Cash surplus/(deficit)	(188)	(732)	(13)	(222)	(182)	(224)	(41)
FX/other	(205)	(484)	(665)	0	0	0	7
Decrease in net debt	**(393)**	**(1,216)**	**(677)**	**(222)**	**(182)**	**(224)**	**(34)**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	2,240	3,456	4,133	4,355	4,537	4,761	4,795
Equity	8,500	10,161	11,339	10,805	10,327	9,884	9,619
Capital employed	10,740	13,617	15,472	15,160	14,864	14,645	14,414
Net debt/equity	26%	34%	36%	40%	44%	48%	50%
Net debt/Net debt & Equity	21%	25%	27%	29%	31%	33%	33%
NAV	27.7	32.3	32.3	30.0	29.3	28.8	28.3
ROAE	1.8%	5.5%	-2.9%	-0.5%	0.4%	0.8%	2.7%
ROACE	2.3%	5.3%	-0.7%	0.3%	1.0%	1.3%	2.6%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	14,886	16,794	7,934	8,370	8,387	8,403	8,420
Core net debt (inc. associates)	2,240	3,456	4,133	4,355	4,537	4,761	4,795
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**17,126**	**20,250**	**12,067**	**12,726**	**12,924**	**13,164**	**13,215**
Net income before minorities	145	509	45	(50)	46	83	261
DD&A + exploration	1,559	2,223	1,754	1,823	1,873	1,929	2,006
Other group non-cash items	291	-440	-19	103	115	135	232
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	94	143	206	112	108	111	116
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**2,089**	**2,434**	**1,987**	**1,988**	**2,142**	**2,257**	**2,616**
EV/DACF	**8.2x**	**8.3x**	**6.1x**	**6.4x**	**6.0x**	**5.8x**	**5.1x**
EV/DACF $	**8.2x**	**8.3x**	**5.9x**	**6.2x**	**5.6x**	**5.2x**	**4.5x**

Devon Energy

Investment Case

The 2H13 midstream transaction and Eagle Ford acquisition coupled with its subsequent non-core asset sales has transformed DVN into a more balanced and capital efficient operator. It has also outlined an improving, lower risk resource inventory, although concerns remain about its longer-term growth visibility outside of the Permian once Eagle Ford growth slows in 2016+. DVN's robust 2015 oil growth will come primarily from the Eagle Ford and its Canadian thermal oil developments, offset by reduced capex lowering natural gas output. DVN's shares appear fairly valued vs. peers and fully valued vs. its historical averages on EV/DACF metrics, particularly on 2016 estimates given the material hedging benefit set to roll off after this year. We rate DVN Neutral with a price target of $43, or 5.9x normalized 2016E DACF and 0.75x NAV.

Financial and Operational Outlook

DVN preliminarily expects to deliver modest oil production growth (and flat companywide growth given declines in natural gas and NGLs) in 2016 with a companywide capex budget of $2.6-$3.1 billion. Notably, its E&D budget is expected to decline from $3.9-$4.1 billion this year to $2.0-$2.5 billion in 2016 without a material impact to production given the completion of Jackfish 3, expiration of its drilling carry in Horizontal Miss and southern Midland Basin, and a full year of lower oilfield service costs. We model $3.2 billion in capex next year, well below consensus of $4.4 billion, which we estimate should enable modest oil growth (but flat companywide growth YoY), and a $700 million free cash flow deficit at the futures strip that could easily be funded by the Access dropdown or EnLink unit sales.

Upside Scenario

Our upside scenario assumes better than expected production growth from its liquids-rich onshore U.S. assets, enabling the company to beat its 2015 targets of 5-10% companywide growth and +25-35% crude oil growth. In this scenario, we see scope for DVN's multiple to appreciate to ~7.0x normalized 2016E DACF and 1.0x NAV, implying upside to ~$58/share.

Downside Scenario

Weaker than expected production growth (particularly US crude volumes) would negatively impact DVN's already below-average growth profile and amplify its large organic free cash flow deficit. Further erosion in valuations of MLPs would also reduce the embedded value of its investments in EnLink and limit one of its monetization options to funding its free cash flow deficit. In this scenario, we believe DVN's multiple could compress to 5.0x 2016E DACF, a half turn below its historical average multiple and providing downside to ~$31/share.

Catalysts

2015: Further disclosure regarding inventory in upper Eagle Ford, Permian's Delaware Bone spring, and Anadarko Basin (Meramec)

2016: Potential dropdowns of Access Pipelines into EnLink.

Valuation

DVN appears fairly valued relative to large-cap peers on EV/2016E DACF and price/NAV. Our $43 price target assumes 5.9x "normalized" 2016E DACF and 0.75x NAV, in line with historical averages.

Devon Energy — Price target: $43 — Upside: 7% — Neutral

Share data				
Mkt cap ($ bn)	16.5	% of S&P 500		0.15%
Mkt cap ($ bn)	16.5	Daily trading volume (m)		1.07
Price ($)	40.1	Free float		84.8%
12m high	72.74	Major shareholders	Vanguard Group	5.5%
12m low	36.63		SSgA Funds Mgmt	4.3%
RIC code	DVN.N		BlackRock Fund	4.2%
Bloomberg code	DVN US			

Operating	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Total production (000 boe/d)	693	673	671	671	693	717	748
Growth	1%	-3%	0%	0%	3%	3%	4%
Oil production (000 bbl/d)	294	353	405	413	436	460	491
Growth	15%	20%	15%	2%	5%	6%	7%
Gas production (000 mcf/d)	2393	1920	1594	1543	1543	1543	1543
Growth	-7%	-20%	-17%	-3%	0%	0%	0%

Profit & Loss ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
WTI $/bbl	**98.02**	**92.89**	**49.00**	**52.50**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	8,727	9,978	7,831	6,077	8,017	9,202	10,304
Other Revenues	(2)	(13)	(3)	0	0	0	0
Total Revenues	**8,725**	**9,965**	**7,828**	**6,077**	**8,017**	**9,202**	**10,304**
Costs	(2,729)	(2,867)	(2,627)	(2,659)	(2,873)	(3,038)	(3,221)
Admin, G&A	(617)	(847)	(902)	(896)	(926)	(958)	(1,000)
Royalties	0	0	0	0	0	0	0
DD&A	(2,780)	(3,319)	(3,313)	(3,231)	(3,340)	(3,456)	(3,606)
Exploration expense	0	0	0	0	0	0	0
Adj Operating Income	**2,599**	**2,932**	**987**	**(708)**	**879**	**1,749**	**2,478**
Other income & Associates	438	758	788	811	893	946	1,019
Net interest	(433)	(526)	(512)	(512)	(512)	(512)	(512)
Pre-tax profit	**2,604**	**3,164**	**1,263**	**(409)**	**1,260**	**2,183**	**2,985**
Tax	(869)	(1,062)	(384)	131	(432)	(779)	(1,045)
Minorities	0	(84)	(75)	(75)	(81)	(87)	(93)
Adj Net income	**1,735**	**2,018**	**804**	**(353)**	**747**	**1,317**	**1,847**
Special items	0	0	0	0	0	0	0
Rep Net income	**1,735**	**2,018**	**804**	**(353)**	**747**	**1,317**	**1,847**

Per Share	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
No. shares (avg)	407	410	413	414	416	418	420
EPS	$4.27	$4.94	$1.96	($0.86)	$1.80	$3.16	$4.41
Adj EPS	$4.26	$4.92	$1.95	($0.85)	$1.80	$3.15	$4.40
Adj CEPS	$12.37	$14.31	$9.95	$5.65	$9.60	$11.85	$13.90
DPS (net)	$0.86	$0.95	$0.98	$1.02	$1.07	$1.12	$1.17
Pay out ratio (EPS)	20%	19%	50%	-120%	60%	35%	27%
Pay out ratio (Adj CEPS)	7%	7%	10%	18%	11%	9%	8%
Tax rate	33%	34%	30%	32%	34%	36%	35%

Cash Flow ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net Income	(20)	1,691	(5,989)	(353)	747	1,317	1,847
DD&A	2,780	3,319	3,313	3,231	3,340	3,456	3,606
Exploration	0	0	0	0	0	0	0
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	2,803	989	7,506	(91)	353	628	831
Working capital/other	(127)	(18)	75	0	0	0	0
Net cashflow from ops	**5,436**	**5,981**	**4,905**	**2,786**	**4,440**	**5,401**	**6,284**
Disposals	419	5,120	8	750	0	0	0
Shares issued	3	93	67	125	125	125	125
Sources	**5,858**	**11,194**	**4,979**	**3,661**	**4,565**	**5,526**	**6,409**
Capex	(6,758)	(6,988)	(5,224)	(3,085)	(4,000)	(5,000)	(5,500)
Acquisitions	0	(6,462)	(417)	0	0	0	0
Dividends	(348)	(386)	(403)	(423)	(444)	(466)	(490)
Shares purchased	4	173	528	0	0	0	0
Other	2,312	117	(48)	0	0	0	0
Applications	**(4,790)**	**(13,546)**	**(5,564)**	**(3,508)**	**(4,444)**	**(5,466)**	**(5,990)**
Cash surplus/(deficit)	1,068	(2,352)	(584)	153	121	60	419
FX/other	(2,187)	(309)	(854)	0	0	0	0
Decrease in net debt	**(1,119)**	**(2,661)**	**(1,438)**	**153**	**121**	**60**	**419**

Balance Sheet ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net debt	6,606	9,267	10,705	10,552	10,431	10,371	9,952
Equity	20,499	26,341	20,401	19,750	20,178	21,154	22,637
Capital employed	27,105	35,608	31,107	30,302	30,609	31,526	32,589
Net debt/equity	32%	35%	52%	53%	52%	49%	44%
Net debt/Net debt & Equity	24%	26%	34%	35%	34%	33%	31%
NAV	66.6	86.8	75.3	73.2	73.6	75.4	77.6
ROAE	12.8%	12.7%	5.4%	-2.3%	5.5%	9.4%	12.3%
ROACE	10.1%	10.3%	4.7%	-0.3%	4.5%	7.0%	9.0%

EV Valuation ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Market capitalisation	23,379	27,552	16,498	16,578	16,658	16,738	16,819
Core net debt (inc. associates)	6,047	7,937	9,986	10,629	10,492	10,401	10,162
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**29,425**	**35,488**	**26,484**	**27,207**	**27,150**	**27,140**	**26,980**
Net income before minorities	5,034	5,869	4,108	2,339	3,995	4,954	5,839
DD&A + exploration	0	0	0	0	0	0	0
Other group non-cash items	0	0	0	0	0	0	0
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	443	509	539	471	477	475	476
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**5,477**	**6,378**	**4,648**	**2,810**	**4,472**	**5,429**	**6,315**
EV/DACF	**5.4x**	**5.6x**	**5.7x**	**9.7x**	**6.1x**	**5.0x**	**4.3x**

Encana

Investment case

We believe ECA is positioned in the best parts of some of the highest return plays in North America, pointing to its two US plays as the cream of the crop with look forward supply costs in the $40 - $50/bbl range, and with the Duvernay potentially capable of adding a third leg to the stool in the coming year. While only 33% of the company's production originates from its core plays, we forecast this growing to >70% by 2018. The fall in oil prices has delayed the recognition of this, and placed the focus on a levered balance sheet and significant funding gap. Notably, the recent disposition of its Haynesville properties lowers the company's debt and helps bridge the 2016 funding gap. Moreover, its legacy asset base provides important financial flexibility which could be used to lower debt levels further and accelerate development of its low cost plays. At 6.9x 2016E debt adjusted cash flow, ECA shares trade at a 13% discount to the Canadian E&P peer group and discounted 25% compared to its US peers. We expect the company's valuation discount to narrow, driven by an improvement in overall profitability and recognition of a much improved asset base. We rate ECA a Buy with a Price Target of $10, or 9.3x our 2016E DACF.

Financial and operational outlook

ECA is in fair financial shape with forecasted 2015E Net Debt/Capitalization of 42% and Net Debt/Cash Flow of 4.1x. Importantly, the company has ample liquidity, remains well bleow its debt covenants, and has no significant near term maturities. We estimate that 2016 cash neutrality is achieved at $80/bbl (WTI), though we note that this is expected to decline to $60/bbl by 2018 as higher value liquids volumes come onstream. We estimate Net Debt/Cap will climb slightly in 2017 to 44%, and decline going forward driven by improving commodity prices and the transition to lower cost liquids plays. Looking forward, we expect capital spending to rise from $1.8 bn in 2015 to $2.3 bn in 2018 as incremental cash flow becomes available. We forecast 5-year production growth (2015-2020) of 6%, with liquids growth of 19% and natural gas production declining slightly.

Upside scenario

Our upside case assumes ECA is able to generate better than expected production growth from its core assets, enabling the company to beat our 2015E-2018E production CAGR estimate of 6%. As a result the company's average 2015-2018 debt adjusted cash flow per share growth increases, and we raise our target multiple by 1.0x to 10.3x. Assuming this multiple – and a $0.50/MMBtu increase in natural gas prices and a $5.00/Bbl increase WTI prices – implies upside to ~$18/share.

Downside scenario

Our downside case assumes ECA is unable to generate expected production growth from its current asset base, falling short of our 2015E-2018E production CAGR estimate of 6%. As a result the company's average 2015-2018 debt adjusted cash flow per share growth decreases, and we lower our target multiple by 1.5x to 7.8x. Assuming this multiple implies downside to ~$3/share.

Catalysts

2015 Quarterly results: We believe delivering production growth from its four core plays is critical for equity performance

2015 November field tour of Permian assets

2015 Further non-core asset sales (DJ Basin, Non-core Canada, San Juan)

Valuation

At 6.9x 2016E debt adjusted cash flow, ECA shares trade at a 13% discount to the Canadian E&P peer group reflecting a significant funding gap, and levered balance sheet. With that in mind we believe the company's repositioned asset base boasts some of the lowest cost supply additions in North America, which in time should drive improved profit margins and capital efficiencies. Our $10 price target (down from $13) assumes 9.3x 2016E DACF, a 9% discount to the peer average, balancing higher expected DACFPS growth with a more levered balance sheet and forecasted funding gap.

Encana Price target: $10 Upside: 46% Buy

Share data				
Mkt cap ($ bn)	5.6	% of TSX 60		0.56%
Mkt cap ($ bn)	5.6	% of MSCI Energy		0.22%
Price ($)	6.8	Daily trading volume (m)		1.82
12m high	23.25	Free float		89.6%
12m low	5.83	Major shareholders	Davis Advisers	8.4%
RIC code	ECA.N		RBC AM	4.1%
Bloomberg code	ECA US		Caisse de Depot	3.3%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	517	478	416	391	412	439	501
Growth	-2%	-7%	-13%	-6%	5%	7%	14%
Oil production (000 bbl/d)	54	87	135	156	185	220	269
Growth	74%	61%	56%	15%	18%	19%	22%
Gas production (000 mcf/d)	2,777	2,349	1,687	1,411	1,365	1,315	1,396
Growth	-7%	-15%	-28%	-16%	-3%	-4%	6%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**97.99**	**93.01**	**48.98**	**52.51**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.35**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
EBITDA	3,548	8,528	(1,830)	1,933	3,882	5,685	8,017
D&A	(1,565)	(1,745)	(1,568)	(1,279)	(1,394)	(1,533)	(1,804)
Operating Profit	**1,983**	**6,783**	**(3,397)**	**654**	**2,488**	**4,152**	**6,213**
Other income & Associates	0	0	0	0	0	0	0
Net interest	(563)	(654)	(654)	(448)	(479)	(439)	(405)
FX	(325)	(403)	(570)	0	0	0	0
Other	(68)	3,303	(4,032)	(43)	(45)	(48)	(55)
EBT	**1,983**	**6,783**	**(3,397)**	**654**	**2,488**	**4,152**	**6,213**
Tax	248	(1,203)	1,880	(16)	(215)	(402)	(631)
Minorities	0	(34)	0	0	0	0	0
Rep Net income	**1,275**	**7,792**	**(6,773)**	**147**	**1,749**	**3,263**	**5,122**
Special items	(473)	(6,790)	6,623	(98)	(1,166)	(2,176)	(3,416)
Adj Net income	**802**	**1,002**	**(150)**	**49**	**582**	**1,087**	**1,706**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	738	741	822	850	858	867	875
EPS	1.73	10.52	-8.24	0.17	2.04	3.76	5.85
Adj EPS	1.09	1.35	-0.18	0.06	0.68	1.25	1.95
Adj CEPS	3.42	3.61	1.73	1.63	2.54	3.42	4.61
DPS (net)	0.67	0.28	0.28	0.28	0.28	0.28	0.28
Pay out ratio (EPS)	62%	21%	-153%	486%	41%	22%	14%
Pay out ratio (Adj CEPS)	20%	8%	16%	17%	11%	8%	6%
Tax rate	nmf	26%	36%	25%	27%	27%	27%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	1,275	7,826	(6,773)	147	1,749	3,263	5,122
DD&A	1,565	1,745	1,568	1,279	1,394	1,533	1,804
Exploration	0	0	4,127	0	0	0	0
Other non-cash items	725	(2,529)	(979)	58	207	350	528
Working capital	(237)	(9)	117	0	0	0	0
Net cashflow from ops	**3,328**	**7,033**	**(1,940)**	**1,485**	**3,349**	**5,145**	**7,455**
Disposals	521	0	1,803	0	0	0	0
Shares issued	0	1,471	1,088	0	0	0	0
Sources	**3,849**	**8,504**	**950**	**1,485**	**3,349**	**5,145**	**7,455**
Capex	(2,712)	(2,526)	(2,055)	(1,814)	(2,046)	(2,274)	(3,173)
Acquisitions	0	(2,461)	0	0	0	0	0
Dividends	(401)	(202)	(164)	(179)	(180)	(182)	(184)
Other	(310)	(1,050)	0	0	0	0	0
Applications	**(3,423)**	**(6,239)**	**(2,219)**	**(1,992)**	**(2,226)**	**(2,456)**	**(3,357)**
Cash surplus/(deficit)	426	2,265	(1,269)	(508)	1,123	2,690	4,097
FX/other	(628)	(4,738)	3,492	155	-1,526	-1,899	-3,139
Decrease in net debt	**(202)**	**(2,473)**	**2,223**	**(353)**	**(403)**	**791**	**959**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	5,465	7,938	5,715	6,067	6,471	5,680	4,721
Equity	5,147	9,685	7,740	7,618	7,417	8,360	9,926
Capital employed	10,612	17,623	13,454	13,685	13,888	14,039	14,647
Net debt/equity	106%	82%	74%	80%	87%	68%	48%
Net debt/Net debt & Equity	51%	45%	42%	44%	47%	40%	32%
NAV	14.4	23.8	16.4	16.1	16.2	16.2	16.7
ROAE	15.6%	10.3%	-1.9%	0.6%	7.9%	13.0%	17.2%
ROACE	nmf	8.4%	2.0%	2.8%	6.7%	10.0%	13.7%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	13,514	15,036	5,615	5,806	5,863	5,921	5,979
Core net debt (inc. associates)	5,465	7,938	5,715	6,067	6,471	5,680	4,721
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**18,978**	**22,974**	**11,330**	**11,874**	**12,334**	**11,601**	**10,700**
Net income before minorities	236	3,426	(3,309)	49	582	1,087	1,706
DD&A + exploration	1,565	1,745	5,695	1,279	1,394	1,533	1,804
Other group non-cash items	725	-2,529	-979	58	207	350	528
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	422	491	490	336	359	329	303
less: peripheral income/cash flow	0	34	0	0	0	0	0
DACF	**2,948**	**3,167**	**1,897**	**1,723**	**2,542**	**3,298**	**4,342**
EV/DACF	**6.4x**	**7.3x**	**6.0x**	**6.9x**	**4.9x**	**3.5x**	**2.5x**
EV/DACF $	**6.4x**	**7.3x**	**6.0x**	**6.9x**	**4.9x**	**3.5x**	**2.5x**

Eni

Investment case

The outstanding feature of Eni is its exploration success. We calculate it has added 8.4bn boe of resources in 2009-14 and with the Zohr discovery we expect 2015>1bn boe as well. This represents well over 2x production and is the most efficient manner in adding future production with positive implications for ongoing cashflows and profitability. It also represents further capital upside as the company can focus its development activities and sell down the remainder. Very competitive production growth and relatively low and consistent capital intensity is the upshot of this success. We acknowledge there is some increased political risk that comes with the portfolio, however, including the core Libyan production assets. Alongside a competitive upstream business the other pillar of the Eni investment case is the restructuring of the downstream businesses which is now gaining traction. Eni shares were impacted earlier in 2015 by the dividend re-set but this was managed in a credible fashion and leaves a sustainable base with upside. The need for a cut was essentially a function of the re-shaping of the business over the past 5 years with in particular the sell-down of Snam. Lastly, there remains one large restructuring transaction to do which is the de-consolidation and sell-down of Saipem. This will simplify the business model of Eni which doesn't need Saipem for its core operations and release significant amount of capital back into the core business once Saipem re-finances it debt – a similar transaction to that conducted with the Snam holding. The timing in the oilfield service cycle is not ideal and any transaction will likely require new core shareholders for Saipem but the upside for Eni is releasing the debt and not realising the equity. Having cut the dividend, the Eni yield is optically lower than peers but it has the virtue of a lower payout ratio and is all cash.

Financial and operational outlook

Eni is well on its path of re-setting the business for lower oil prices as management are now targeting cash neutrality at <€75/bbl in 2017. We believe that with industry cost deflation and its outperformance in the downstream restructuring it will handily beat that target. 2Q 2015 gearing stood at 21%. We estimate that 2015 cash neutrality is achieved at ~$90/bbl but this comes down rapidly – gearing actually peaks this year as future years are aided by the improved downstream and asset disposals. ROACE is weak over the forecast period, normalizing at 8-9% because of legacy balance sheet capital issues and also a conservative depreciation policy. Release of capital from a Saipem disposal (~10% of capital) would be accretive in this regard.. We estimate 5-year production growth (2014-2019) at 2.7%, driven by new start-ups in the North Sea, Kazakhstan, Venezuela and West Africa but with significant follow on in Mozambique and now potentially Egypt to follow.

Upside scenario

Delivery of the downstream turnaround to plan would add 3% upside to UBS current estimates. Re-rating to sector average 2017 EV/DACF of 5.6x would place shares at ~€21.50/share. Achieving targeted sale of exploration assets would add ~9% to valuation at target multiples. De-consolidation of Saipem could add 2-5%. Putting Eni on the same multiple as Total would imply €25/share.

Downside scenario

If G&P only goes to breakeven, then Eni would see ~€0.6bn lower cashflows from 2018 (~4%) pushing the cashflow breakeven up by US$5-10/bbl. If R&M and Chemicals reverted to make losses to the average of the last 3 years, our net income forecasts will go down by ~45%, ~30% and ~15% in 2015/16/17 respectively. Libya continues to be troubling with general population unrest and demonstration interrupting production – Libya makes up ~18% of Eni production at full potential and the security situation remains precarious. De-rating to a 3-year trough EV/DACF (normalised) of 3.5x would place shares at ~€11/share.

Catalysts

29 Oct 2015	3Q15 results
2H15	Goliat start-up, Mozambique FLNG FID
2016	Mozambique onshore FID
2016+	Saipem sell down/restructuring

Valuation

We have a Buy rating on Eni. Our €16.50 price target is set at a 2017E EV/DACF of 4.5x vs the sector at 5.4x, in line with the historical discount which may start to look unwarranted (Statoil also 4.5x). Target implies a 2017E P/E of 15.1x and current dividend yield of 4.7% (sector 11.8x and 5.4% respectively). Dividend is all cash and earnings reflect a depreciation rate much closer to capex than is common in the sector.

Eni Price target: € 16.50 Upside: 14% Buy

Share data				
Mkt cap (€ bn)	52.0	FTSE MIB		12.22%
Mkt cap ($ bn)	58.0	FTSE Eurofirst 100		1.21%
Price (€)	14.45	MSCI Pan-Euro		0.51%
12m high	19.45	Daily trading volume		21.1
12m low	13.14	Free float		69.7%
RIC code (ADR)	ENI.MI	Major shareholders	Italian gov't	30.1%
Bloomberg code	ENI IM		Chinese gov't	2.1%
ADR ratio	2		Norges Bank IM	1.5%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	1619	1598	1732	1727	1724	1825	1825
Growth	-5%	-1%	8%	0%	0%	6%	0%
Ref thru'puts (000 b/d)	606	554	528	450	450	455	459
Growth	-9%	-9%	-5%	-15%	0%	1%	1%
Product sales (000 b/d)	1043	1068	1094	1121	1150	1180	1212
Growth	2%	2%	2%	3%	3%	3%	3%

Profit & Loss (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
$/€	**1.33**	**1.33**	**1.13**	**1.14**	**1.14**	**1.14**	**1.14**
E&P	14,775	11,551	3,439	3,893	7,977	10,217	11,916
Gas & Power	(662)	310	271	219	757	824	865
R&M (inc. Petchems from 2015)	(482)	(211)	439	362	420	384	443
Petrochemicals	(386)	(346)	-	-	-	-	-
Oilfield Services and Engineering	(84)	479	(228)	748	770	793	817
Other/Corporate	(541)	(442)	(412)	(360)	(367)	(375)	(382)
Intragroup Eliminations	0	231	82	0	0	0	0
Adj Operating Income	**12,620**	**11,572**	**3,590**	**4,862**	**9,556**	**11,844**	**13,658**
Net interest	(801)	(924)	(815)	(706)	(678)	(588)	(474)
Other financial	816	301	664	440	461	482	516
Pretax profit	**12,635**	**10,949**	**3,439**	**4,596**	**9,339**	**11,738**	**13,700**
Tax	(8,398)	(7,195)	(2,525)	(2,500)	(4,998)	(6,423)	(7,508)
Minorities	196	(66)	274	(288)	(297)	(326)	(335)
Adj Net Income	**4,433**	**3,688**	**1,185**	**1,807**	**4,044**	**4,989**	**5,857**
Special items	763	(2,405)	(384)	0	0	0	0
Rep Net Income	**5,196**	**1,283**	**801**	**1,807**	**4,044**	**4,989**	**5,857**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	3,634	3,618	3,603	3,603	3,603	3,603	3,603
EPS	1.43	0.35	0.22	0.50	1.12	1.38	1.63
Adj EPS	1.22	1.02	0.33	0.50	1.12	1.38	1.63
Adj CEPS	3.02	4.17	3.73	3.68	4.40	4.92	5.27
DPS (net)	1.10	1.12	0.80	0.80	0.85	0.87	0.88
EPS/ADR	$3.80	$0.94	$0.50	$1.14	$2.56	$3.16	$3.71
Adj EPS/ADR	$3.24	$2.71	$0.74	$1.14	$2.56	$3.16	$3.71
Adj CEPS/ADR	$20.04	$27.72	$21.06	$20.95	$25.07	$28.07	$30.05
DPS (net)/ADR	$2.92	$2.98	$1.81	$1.82	$1.94	$1.98	$2.02
Pay out ratio (EPS)	90%	110%	243%	159%	76%	63%	54%
Pay out ratio (Adj CEPS)	36%	27%	21%	22%	19%	18%	17%
Tax rate (clean)	66%	66%	73%	54%	54%	55%	55%

Cash Flow (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net income	5,196	1,283	801	1,807	4,044	4,989	5,857
Minority adjustment	(196)	(441)	(418)	288	297	326	335
DD&A/exploration	9,302	9,970	11,062	11,485	11,757	12,678	13,030
Other non-cash items	(3,742)	1,123	(1,008)	0	0	0	0
Working capital	409	3,104	2,821	(339)	(250)	(250)	(225)
Tax/interest	0	0	0	0	0	0	0
Net cashflow from ops	**10,969**	**15,546**	**13,406**	**13,242**	**15,848**	**17,743**	**18,996**
Disposals	8,113	4,636	1,945	1,750	500	500	500
Shares issued	0	0	0	0	0	0	0
Sources	**19,082**	**20,182**	**15,351**	**14,992**	**16,348**	**18,243**	**19,496**
Capex	(12,750)	(12,240)	(12,239)	(11,101)	(11,062)	(11,739)	(11,877)
Acquisitions	(6,306)	(1,339)	(810)	0	0	0	0
Dividends	(4,228)	(4,055)	(3,463)	(2,887)	(2,978)	(3,098)	(3,160)
Share purchases	1	(380)	0	0	0	0	0
Other	0	0	0	0	0	0	0
Applications	**(23,283)**	**(18,014)**	**(16,512)**	**(13,988)**	**(14,039)**	**(14,837)**	**(15,038)**
Cash surplus/(deficit)	(4,201)	2,168	(1,162)	1,004	2,309	3,406	4,458
FX/other	5,011	(402)	(18)	0	0	0	0
Decrease in net debt	**810**	**1,766**	**(1,180)**	**1,004**	**2,309**	**3,406**	**4,458**

Balance Sheet (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	15,587	14,278	15,417	14,413	12,104	8,698	4,239
Equity	61,215	62,250	62,943	62,152	63,516	65,732	68,764
Capital employed	76,802	76,528	78,360	76,565	75,619	74,430	73,003
Net debt/Equity	25%	23%	24%	23%	19%	13%	6%
Net debt/Net debt & Equity	20%	19%	20%	19%	16%	12%	6%
NAV	16.8	17.2	17.5	17.3	17.6	18.2	19.1
ROAE	7.2%	6.0%	1.9%	2.9%	6.4%	7.7%	8.7%
ROACE	6.2%	5.7%	1.9%	3.3%	6.3%	7.6%	8.8%

EV Valuation (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	63,645	64,515	52,036	52,036	52,036	52,036	52,036
Core net debt (inc. associates)	15,992	14,921	14,847	14,915	13,258	10,401	6,469
Buy-out of minorities	(1,960)	660	(2,195)	2,307	2,376	2,608	2,681
Pension provisions	0	0	0	0	0	0	0
Less: Peripheral assets (Snam RG)	0	0	0	0	0	0	0
EV	**77,677**	**80,096**	**64,688**	**69,258**	**67,671**	**65,044**	**61,186**
Net income before minorities	5,000	1,349	527	2,096	4,341	5,315	6,192
DDA + exploration	9,302	9,970	11,062	11,485	11,757	12,678	13,030
Other group non-cash items	(6,896)	179	(1,890)	(418)	0	0	0
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	528	748	571	494	475	412	332
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**7,934**	**12,246**	**10,270**	**13,657**	**16,573**	**18,405**	**19,553**
EV/DACF	**9.8x**	**6.5x**	**6.3x**	**5.1x**	**4.1x**	**3.5x**	**3.1x**
EV/DACF $	**9.8x**	**6.6x**	**6.2x**	**5.0x**	**4.0x**	**3.5x**	**3.1x**

EOG Resources

Investment Case

While EOG is widely regarded as one of the best E&Ps in the sector given its superior long-term growth and ROCE track record, solid unbooked resource inventory, disciplined management, and technical leadership, the company is cutting spending this year by >40% YoY which we estimate should result a 3% YoY production decline. And while we believe the ability to rapidly bring on deferred well completions will enable it to return to modest oil as well as companywide growth in 2016, its recent outperformance leaves it trading at a material premium to its historical average multiple as well as to peers on EV/DACF and price/NAV. We rate EOG a Neutral with a price target of $80, implying 7.3x normalized 2016E DACF.

Financial and Operational Outlook

While EOG is deferring well completions in 2H15 in response to low oil prices, it expects to begin completing its backlog of drilled but uncompleted wells by 4Q15 or early 2016 in an effort to at least hold production flat. Meanwhile, it also expects to keep capex roughly in line with operating cash flow next year. Assuming a 10% YoY decline in capex to $4.4 billion (well below consensus of $4.8 billion) in 2016, we estimate EOG could generate 4% YoY companywide growth (including 9% YoY oil growth) with a $900 million free cash flow deficit at current strip prices.

Upside Scenario

Our upside case assumes oil prices return to more normalized levels, prompting EOG to increase its activity levels and raise its oil volume guidance to double-digit per annum growth. Under this scenario, we could see EOG appreciating to 8.0x our normalized 2016E DACF, implying upside to $89/share.

Downside Scenario

Our downside case assumes a slower than expected return to a more normalized oil price environment which could further slow EOG's pace of development, enabling disappointing liquids growth beyond just 2015. Furthermore, it could also put its dividend growth and debt reduction targets at risk. Under this scenario, we could see EOG's multiple compressing toward the peer average of 6.5x normalized 2016E DACF, or ~$70/share. Assuming a $5.00/Bbl and $0.50/MMBtu decrease to our normalized oil and gas prices, respectively, would lower this estimate to $66/share.

Catalysts

2015: Preliminary disclosure of Second Bone Spring potential

1Q16: Disclosure of 2016 capex budget and production growth guidance

Valuation

EOG is trading at a premium to peers and its historical averages on 2015-16E DACF and price/NAV. Our $80 price target is based on 7.3x normalized 2016E DACF, above the peer average of 6.7x.

EOG Resources   Price target: $80   Upside: 4%   Neutral

Share data				
Mkt cap ($ bn)	42.2	% of S&P 500		0.28%
Mkt cap ($ bn)	42.2	Daily trading volume (m)		1.19
Price ($)	76.9	Free float		90.0%
12m high	105.22	Major shareholders	Vanguard Group	6.5%
12m low	68.36		Capital Research	4.7%
RIC code	EOG.N		SSgA Funds Mgmt	4.6%
Bloomberg code	EOG US			

Operating	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Total production (000 boe/d)	510	595	577	598	631	674	727
Growth	9%	17%	-3%	4%	6%	7%	8%
Oil production (000 bbl/d)	286	369	367	396	430	473	526
Growth	34%	29%	-1%	8%	8%	10%	11%
Gas production (000 mcf/d)	1347	1353	1261	1207	1207	1207	1207
Growth	-11%	0%	-7%	-4%	0%	0%	0%

Profit & Loss ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
WTI $/bbl	**97.99**	**93.01**	**48.98**	**52.51**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	10,756	12,593	6,602	7,597	9,789	11,281	13,028
Other Revenues	173	88	741	50	50	50	50
Total Revenues	**10,929**	**12,681**	**7,343**	**7,647**	**9,839**	**11,331**	**13,078**
Costs	(2,978)	(3,500)	(3,041)	(3,153)	(3,437)	(3,728)	(4,077)
Admin, G&A	(348)	(402)	(353)	(354)	(359)	(369)	(382)
Royalties	0	0	0	0	0	0	0
DD&A	(3,601)	(3,997)	(3,723)	(3,937)	(4,145)	(4,431)	(4,777)
Exploration expense	(236)	(233)	(238)	(245)	(258)	(276)	(297)
Adj Operating Income	**3,766**	**4,549**	**(13)**	**(42)**	**1,640**	**2,527**	**3,545**
Other income & Associates	(8)	(125)	(63)	(15)	(30)	(35)	(35)
Net interest	(235)	(201)	(233)	(233)	(233)	(233)	(233)
Pre-tax profit	**3,522**	**4,223**	**(308)**	**(289)**	**1,377**	**2,259**	**3,277**
Tax	(1,278)	(1,507)	62	96	(503)	(809)	(1,147)
Minorities	0	0	0	0	0	0	0
Adj Net income	**2,244**	**2,716**	**(246)**	**(194)**	**874**	**1,450**	**2,130**
Special items	0	0	0	0	0	0	0
Rep Net income	**2,244**	**2,716**	**(246)**	**(194)**	**874**	**1,450**	**2,130**

Per Share	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
No. shares (avg)	546	549	551	557	563	569	575
EPS	$4.15	$5.00	($0.45)	($0.35)	$1.56	$2.56	$3.72
Adj EPS	$4.11	$4.95	($0.45)	($0.35)	$1.55	$2.55	$3.70
Adj CEPS	$13.28	$15.01	$7.05	$7.40	$10.35	$12.20	$14.35
DPS (net)	$0.36	$0.51	$0.69	$0.72	$0.74	$0.77	$0.80
Pay out ratio (EPS)	9%	10%	-154%	-206%	48%	30%	22%
Pay out ratio (Adj CEPS)	3%	3%	10%	10%	7%	6%	6%
Tax rate	36%	36%	20%	33%	37%	36%	35%

Cash Flow ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net Income	2,197	2,915	(580)	(194)	874	1,450	2,130
DD&A	3,601	3,997	3,723	3,937	4,145	4,431	4,777
Exploration	0	0	102	192	203	217	234
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	1,429	1,296	641	230	655	896	1,159
Working capital/other	102	441	(403)	0	0	0	0
Net cashflow from ops	**7,329**	**8,649**	**3,483**	**4,166**	**5,876**	**6,993**	**8,299**
Disposals	761	569	116	0	0	0	0
Shares issued	39	22	86	288	288	288	288
Sources	**8,129**	**9,241**	**3,686**	**4,453**	**6,164**	**7,281**	**8,587**
Capex	(7,061)	(8,247)	(4,850)	(4,400)	(5,500)	(6,600)	(7,590)
Acquisitions	0	0	0	0	0	0	0
Dividends	(199)	(280)	(380)	(399)	(419)	(440)	(462)
Shares purchased	(64)	(127)	(26)	0	0	0	0
Other	51	22	4	0	0	0	0
Applications	**(7,272)**	**(8,632)**	**(5,252)**	**(4,799)**	**(5,919)**	**(7,040)**	**(8,052)**
Cash surplus/(deficit)	842	773	(1,736)	(346)	245	241	535
FX/other	(298)	52	148	0	0	0	0
Decrease in net debt	**543**	**825**	**(1,588)**	**(346)**	**245**	**241**	**535**

Balance Sheet ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net debt	4,696	3,872	5,460	5,806	5,560	5,319	4,784
Equity	15,418	17,713	16,886	16,581	17,324	18,623	20,579
Capital employed	20,115	21,584	22,346	22,387	22,885	23,942	25,363
Net debt/equity	30%	22%	32%	35%	32%	29%	23%
Net debt/Net debt & Equity	23%	18%	24%	26%	24%	22%	19%
NAV	36.8	39.3	40.5	40.2	40.6	42.0	44.1
ROAE	23.2%	24.2%	-0.7%	-0.6%	8.2%	12.2%	15.9%
ROACE	17.2%	18.4%	0.3%	0.2%	6.4%	9.3%	12.2%

EV Valuation ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Market capitalisation	39,381	53,847	42,132	42,686	43,147	43,608	44,070
Core net debt (inc. associates)	4,968	4,284	4,666	5,633	5,683	5,440	5,052
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**44,349**	**58,131**	**46,798**	**48,318**	**48,830**	**49,048**	**49,121**
Net income before minorities	2,244	2,716	(246)	(194)	874	1,450	2,130
DD&A + exploration	4,124	4,438	4,253	4,432	4,665	4,987	5,376
Other group non-cash items	884	1,085	-123	-117	292	511	748
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	212	184	235	214	207	208	208
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**7,465**	**8,423**	**4,119**	**4,334**	**6,039**	**7,156**	**8,463**
EV/DACF	**5.9x**	**6.9x**	**11.4x**	**11.1x**	**8.1x**	**6.9x**	**5.8x**

ExxonMobil

Investment Case

While we regard XOM as one of the best-run integrateds in the world, it appears fully valued relative to peers and its historical relative PE to the S&P 500. XOM has sacrificed ROCE in pursuit of long-term unconventional resource growth and bolt-on purchases. The material increase in its capex over the last few years has eroded its superior free cash flow yield, and while XOM still boasts a strong balance sheet and high ROCE relative to peers, its historical premium to peers on these metrics has narrowed significantly. While its balance sheet and capital spending cycle were better positioned for the oil price downturn than its peers, its valuation reflects this given an unusually wide premium to peers and its historical average on EV/DACF and PE. And with oil prices poised to rebound, we favor E&Ps and other global Majors.

Financial and Operational Outlook

Beyond this year, XOM forecasts companywide volume growth to the tune of ~2-3% per year in 2016-17 with liquids growth of ~4% per annum while natural gas production should be down ~2% YoY next year but up ~4% YoY in 2017 from the ramp-up at Gorgon LNG. XOM also it expects to spend less than recent years with a 2015 capex budget of ~$34 billion (down ~12% YoY) and 2016-17 spending expected to average less than ~$34 billion per year (although management has inferred 2016-17 spending could see greater downward pressure given cost savings and efficiency gains achieved this year). And while we forecast XOM's budget falls to ~$30.7 billion per annum in 2016-17, it still implies a recovery in WTI to ~$70/Bbl before XOM reaches cash flow neutrality (post dividend but before share repurchases). Meanwhile, as a result of deteriorating levels of free cash flow generation, XOM has curbed the pace of its share repurchases to ~$500 million per quarter in 3Q, well below last year's run-rate of ~$3 billion per quarter. Notably, the lower capital spending through 2017 will largely come from reduced Upstream spending, implying attractive volume growth beyond 2017 remains at risk. We forecast growth slows to just 1.0% and 0.3% per annum in 2018-19, respectively.

Upside Scenario

Our upside case assumes XOM posts better than expected 2015-16 production growth and improves per-Boe metrics, enabling the company to begin narrowing its free cash flow deficit. In this more optimistic scenario coupled with its European peers' continued struggles to narrow the funding gap, XOM's multiple could expand to 9.0x normalized 2016E DACF, implying upside to $83/share. Using our normalized price forecasts as a base, we estimate a $0.50/MMBtu increase in gas prices and a $5.00/Bbl rise in oil prices would improve XOM's upside valuation to $86/share.

Downside Scenario

Our downside case assumes XOM misses production guidance (also putting its 2016-17 production CAGR target of 2-3% per annum at risk) and widens its free cash flow deficit. In this scenario, we could see XOM's normalized 2016E EV/DACF multiple compress towards 7.4x, in line with its historical average and implying downside to $68/share. Relative to our normalized price forecasts, a $0.50/MMBtu and $5.00/Bbl decline in natural gas and crude oil prices, respectively, reduces this estimate to $65/share.

Catalysts

2015 quarterly updates: actual production/capex vs. guidance

February 2016: capex guidance

March 2016: longer term production growth guidance

Valuation

XOM trades well above its historical average premium to peers on 2015-16E DACF, and also appears richly valued on relative PE. Our $77 price target assumes 8.4x normalized 2016E DACF.

ExxonMobil Price target: $77 Upside: 6% Neutral

Share data				
Mkt cap ($ bn)	302.1	% of S&P 500		2.64%
Mkt cap ($ bn)	302.1	Daily trading volume (m)		3.9
Price ($)	72.5	Free float		100.0%
12m high	99.26	Major shareholders	Vanguard Group, Inc.	6.1%
12m low	68.71		SSgA Funds Mgmt.	4.3%
RIC code (ADR)	XOM.N		BlackRock	4.0%
Bloomberg code	XOM US			

Operating	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Production (000 boe/d)	4,175	3,968	4,090	4,132	4,255	4,298	4,310
Growth	-2%	-5%	3%	1%	3%	1%	0%
Ref thru'puts (000 b/d)	4,586	4,476	4,453	4,453	4,453	4,453	4,453
Growth	-9%	-2%	-1%	0%	0%	0%	0%
Product sales (000 b/d)	5,887	5,876	5,885	5,955	6,027	6,099	6,173
Growth	-5%	0%	0%	1%	1%	1%	1%

Profit & Loss ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
WTI Crude $/bbl	97.99	93.01	48.98	52.51	65.00	70.00	75.00
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P-U.S.	4,191	5,197	(664)	(71)	1,048	2,574	2,337
E&P-Non-U.S.	22,650	22,351	8,060	8,487	12,396	19,129	18,510
E&P	26,841	24,948	7,396	8,416	13,444	21,703	20,847
R&M-U.S.	2,199	1,618	2,428	2,087	2,049	998	1,029
R&M-Non-U.S.	1,250	1,427	4,367	3,010	2,627	1,781	1,878
R&M	3,449	2,945	6,795	5,097	4,676	2,780	2,907
Chemicals	3,828	4,315	4,341	4,240	4,243	3,502	3,505
Other	(1,538)	(2,388)	(2,735)	(3,207)	(3,329)	(3,323)	(3,393)
Corporate and financing	0	0	(0)	0	(0)	0	0
Adj Net Income	**32,580**	**29,820**	**15,797**	**14,545**	**19,034**	**24,661**	**23,865**
Special items	0	2,700	0	0	0	0	0
Rep Net Income	**32,580**	**32,520**	**15,797**	**14,545**	**19,034**	**24,661**	**23,865**

Per Share	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
No. shares (avg)	4,419	4,282	4,184	4,147	4,127	4,063	3,996
EPS	$7.37	$7.60	$3.78	$3.51	$4.61	$6.07	$5.97
Adj EPS	$7.37	$6.96	$3.78	$3.51	$4.61	$6.07	$5.97
Adj CEPS	$11.23	$11.69	$7.89	$7.55	$8.94	$10.70	$10.90
DPS (net)	$2.46	$2.70	$2.88	$3.01	$3.25	$3.56	$3.64
Pay out ratio (EPS)	33%	39%	76%	86%	70%	59%	61%
Pay out ratio (Adj CEPS)	22%	23%	37%	40%	36%	33%	33%
Tax rate	42%	36%	38%	42%	42%	42%	42%

Cash Flow ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net Income	33,448	33,615	16,004	14,545	19,034	24,661	23,865
DD&A	17,182	17,297	17,507	18,268	19,372	20,299	21,187
Exploration	0	0	0	0	0	0	0
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	(996)	(864)	(515)	(1,500)	(1,500)	(1,500)	(1,500)
Working capital/other	(4,720)	(4,932)	(1,533)	0	0	0	0
Net cashflow from ops	**44,914**	**45,116**	**31,463**	**31,313**	**36,907**	**43,460**	**43,552**
Disposals	2,707	4,035	3,113	4,000	4,000	4,000	4,000
Shares issued	50	30	0	0	0	0	0
Sources	**47,671**	**49,181**	**34,576**	**35,313**	**40,907**	**47,460**	**47,552**
Capex	(33,669)	(32,952)	(28,470)	(27,268)	(25,579)	(27,032)	(27,149)
Acquisitions	0	0	0	0	0	0	0
Dividends	(10,875)	(11,568)	(12,054)	(12,482)	(13,411)	(14,461)	(14,546)
Shares purchased	(15,998)	(13,183)	(3,784)	(2,000)	(2,000)	(8,000)	(8,000)
Applications	**(52,596)**	**(49,140)**	**(29,649)**	**(32,574)**	**(38,948)**	**(46,477)**	**(46,623)**
Cash surplus/(deficit)	(4,925)	41	4,927	2,739	1,958	983	929
FX/other	(11,131)	(6,491)	(14,841)	-9,176	-2,938	-3,017	-3,071
Decrease in net debt	**(16,056)**	**(6,450)**	**(9,914)**	**(6,437)**	**(1,876)**	**(2,033)**	**(2,142)**

Balance Sheet ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net debt	18,055	24,505	34,419	40,856	40,939	41,818	43,960
Equity	180,495	181,064	178,586	178,650	182,273	187,196	188,515
Capital employed	198,550	205,569	213,005	219,506	224,781	229,014	232,476
Net debt/equity	10%	14%	19%	23%	22%	22%	23%
Net debt/Net debt & Equity	9%	12%	16%	18%	18%	18%	19%
NAV	44.9	48.0	50.9	52.9	54.6	56.4	58.2
ROAE	18.5%	16.5%	8.8%	8.1%	10.5%	13.4%	12.7%
ROACE	17.1%	14.6%	7.8%	7.2%	9.2%	11.4%	10.9%

EV Valuation ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Market capitalisation	399,910	416,481	303,197	316,110	313,838	309,707	304,619
Core net debt (inc. associates)	10,027	24,505	34,419	40,856	39,785	41,818	42,889
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**409,937**	**440,986**	**352,827**	**354,019**	**353,623**	**351,525**	**347,508**
Net income before minorities	33,448	33,615	16,004	14,545	19,034	24,661	23,865
DD&A + exploration	17,182	17,297	17,507	18,268	19,372	20,299	21,187
Other group non-cash items	(996)	(864)	(515)	(1,500)	(1,500)	(1,500)	(1,500)
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	1	168	587	1,300	1,469	1,485	1,576
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**49,635**	**50,216**	**33,583**	**32,613**	**38,375**	**44,945**	**45,128**
EV/DACF	**8.3x**	**8.8x**	**10.3x**	**10.1x**	**8.8x**	**7.8x**	**7.7x**

Galp

Investment case

We regard Galp as a value play primarily on Brazil, on a long-term pathway to a NAV increase. In the short term, we believe the benefits from the lower oil price for the downstream provide some hedge. LNG hedges in G&P limit the impact of lower spot prices, and the regulated assets generate reliable CFs. Gearing should rise over the next three years to ~30%, on our estimates, but we note that the company has sufficient liquidity to go through a period of lower oil prices. 2015 will be important for the company in showing that production growth is coming through (we expect 47% y/y growth) and in demonstrating that it has the balance sheet to finance the large capex commitments of the next few years. FID on Mozambique LNG and the results from the Carcara appraisal are also expected in 2015/early 2016. Potential asset sales by Petrobras could highlight the value of some of Galp's assets (Jupiter, Carcara).

Financial and operational outlook

2Q 2015: gearing stood at 26%. Excluding the outstanding loan to Sinopec of €835m, gearing was 19%. We see gearing peaking at 30% in 2018 and Galp turning FCF positive in 2018. ROACE is increasing over the next few years as Brazilian projects come on stream. We see ROACE reaching 13.2% in 2020E. We expect capex to remain high: up to €1.3bn in 2015 from €1.1bn in 2014 and at €1.5bn over 2016-20E. The heavy investments drive sector-leading production growth of 37% per annum to 2020. The large weight of Refining in current earnings should provide a very efficient natural hedge to the lower oil price in the short-term (Galp was FCF neutral over 1H15 thanks to the high refining margins).

Upside scenario

Under our upside scenario, we see fair value at €15/share as strong delivery reassures the market on the growth profile and narrows the NAV gap to ~10%. From a macro perspective a ~$10/bbl move in the LT oil price has a ~$2.3bn (~€2/sh) impact on our NAV. In 2015E a $1/bbl move in the oil price is equivalent to ~€10m (~0.7%) on EBITDA and a $1/bbl move in refining margins is equivalent to ~€90m (~7%). Executing on the Brazilian production growth plan offers upside in respect of NAV accretion and FCF of ~>$11bn (~€10/sh) over the coming 10 years (2014-25E).

Downside scenario

Under our upside scenario, we see fair value at €8/share as delays in Brazil ramp-up see NAV leakage and the stock trading at a wider gap to NAV of ~50%. Downside scenarios relate to specific project and country risk, namely because Brazil's Santos Basin accounts for ~50% of EV. A one-year delay in Brazil would account for ~5% of EV or~€1/sh.

Catalysts

12 October 2015	3Q15 trading update
26 October 2015	3Q15 results
By end 2015	Lula/Iracema unitisation agreement
Late 2015	FID on Mozambique FLNG
Late 2015/early 2016	Carcara appraisal well results and resources update
2015-16	Potential pre-salt asset sales by Petrobras (including Jupiter and Carcara)

Valuation

We have a Buy rating on Galp. Our price target of €12 is set at ~25% discount to our €16.4/share NAV, vs. a 5-year average of a 29% discount and sector currently trading at a ~26% discount. In terms of multiples, it translates into 7.5x 2019E EV/DACF vs. sector at 4.8x.

GALP — Price target: € 12.0 — Upside: 34% — Buy

Share data				
Mkt cap (€ bn)	7.4	PSI 20		15.16%
Mkt cap ($ bn)	8.3	Euronext Top 100		0.33%
Price (€)	8.98	MSCI Pan-Euro		0.05%
12m high	13.57	Daily trading volume		1.6
12m low	7.92	Free float		46.7%
RIC code (ADR)	GALP.LS	Major shareholders	Amorim Energia	38.3%
Bloomberg code	GALP PL		Eni	8.0%
ADR ratio	1		Parpublica	7.0%
				1.3653506

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	21	27	42	60	87	113	146
Growth	15%	30%	56%	43%	45%	30%	30%
Ref thru'puts (000 b/d)	240	217	275	277	277	277	277
Growth	7%	-9%	27%	1%	0%	0%	0%
Product sales (000 b/d)	59	59	59	59	59	59	59
Growth	0%	0%	0%	0%	0%	0%	0%

Profit & Loss (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
$/€	**1.33**	**1.33**	**1.13**	**1.14**	**1.14**	**1.14**	**1.14**
E&P	230	295	162	321	840	1,366	2,110
Gas and Power	338	363	327	276	288	300	308
Refining and marketing	3	99	484	337	250	226	194
Other	18	17	23	16	16	16	16
Adj Operating Income	**589**	**775**	**997**	**951**	**1,394**	**1,908**	**2,628**
Net interest	(142)	(145)	(161)	(166)	(168)	(176)	(178)
Affiliates	63	63	74	75	78	80	82
Pretax profit	**511**	**692**	**911**	**860**	**1,304**	**1,812**	**2,533**
Tax	(178)	(253)	(321)	(355)	(608)	(870)	(1,266)
Minorities	(23)	(67)	(43)	(81)	(200)	(297)	(427)
Adj net income (pre-goodwill)	**310**	**373**	**546**	**424**	**497**	**646**	**839**
Post tax specials	(121)	(546)	(247)	50	48	23	22
Reported net income	**189**	**(173)**	**299**	**474**	**545**	**669**	**861**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	829	829	829	829	829	829	829
EPS	0.23	-0.21	0.36	0.57	0.66	0.81	1.04
Adj EPS	0.37	0.45	0.66	0.51	0.60	0.78	1.01
Adj CEPS	0.95	1.09	1.84	1.33	1.66	2.12	2.57
DPS (net)	0.29	0.35	0.41	0.50	0.50	0.52	0.63
EPS/ADR	$0.30	-$0.28	$0.41	$0.65	$0.75	$0.92	$1.18
Adj EPS/ADR	$0.50	$0.60	$0.74	$0.58	$0.68	$0.89	$1.15
Adj CEPS/ADR	$1.27	$1.45	$2.08	$1.52	$1.90	$2.41	$2.93
DPS (net)/ADR	$0.38	$0.46	$0.47	$0.57	$0.57	$0.60	$0.71
Pay out ratio (EPS)	77%	77%	63%	97%	83%	67%	62%
Pay out ratio (Adj CEPS)	30%	32%	23%	37%	30%	25%	24%
Tax rate	30%	38%	35%	41%	47%	48%	50%

Cash Flow (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	189	(173)	299	474	545	669	861
Minority adjustment	51	55	29	81	200	297	427
DD&A (inc. exploration)	585	614	704	735	829	886	942
Working capital	30	326	368	(185)	(195)	(97)	(97)
Other	(64)	83	124	0	0	0	0
Net cashflow from ops	**791**	**904**	**1,525**	**1,104**	**1,380**	**1,754**	**2,133**
Disposals	111	0	0	0	0	0	0
Shares	0	0	0	0	0	0	0
Sources	**902**	**904**	**1,525**	**1,104**	**1,380**	**1,754**	**2,133**
Capex	(964)	(1,142)	(1,308)	(1,428)	(1,488)	(1,568)	(1,588)
Acquisitions	0	0	0	0	0	0	0
Dividends	(222)	(275)	(317)	(378)	(413)	(423)	(477)
Other	(191)	166	333	678	0	0	0
Applications	**(1,377)**	**(1,251)**	**(1,292)**	**(1,128)**	**(1,901)**	**(1,991)**	**(2,065)**
Cash surplus/(deficit)	(475)	(347)	233	(24)	(521)	(237)	68
FX/other	(2)	0	1	(0)	0	0	0
Decrease in net debt	**(477)**	**(347)**	**234**	**(24)**	**(521)**	**(237)**	**68**

Balance Sheet (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	2,174	2,520	2,286	2,311	2,832	3,069	3,000
Equity	6,416	6,393	6,537	6,632	6,765	7,010	7,395
Capital employed	8,589	8,913	8,823	8,943	9,596	10,079	10,395
Net debt/Equity	34%	39%	35%	35%	42%	44%	41%
Net debt/Net debt & Equity	25%	28%	26%	26%	30%	30%	29%
NAV	7.7	7.7	7.9	8.0	8.2	8.5	8.9
ROAE	5.5%	6.7%	8.9%	7.7%	10.4%	13.7%	17.6%
ROACE	5.4%	5.9%	7.6%	6.8%	8.5%	10.5%	13.2%

EV Valuation (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	10,112	10,032	7,447	7,447	7,447	7,447	7,447
Core net debt (inc. associates)	2,174	2,520	2,286	2,311	2,832	3,069	3,000
Buy-out of minorities	509	549	289	807	1,996	2,966	4,271
Pension provisions	338	411	422	422	422	422	422
Peripheral assets	0	0	0	0	0	0	0
EV	**13,133**	**13,512**	**10,444**	**10,986**	**12,696**	**13,903**	**15,139**
Net income before minorities	240	(119)	328	554	745	965	1,288
DD&A + exploration	585	614	704	735	829	886	942
Other group non-cash items	(64)	83	124	0	0	0	0
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	100	90	104	98	90	91	89
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**860**	**668**	**1,261**	**1,387**	**1,664**	**1,943**	**2,320**
EV/DACF	**15.3x**	**20.2x**	**8.3x**	**7.9x**	**7.6x**	**7.2x**	**6.5x**
EV/DACF $	**15.3x**	**20.3x**	**8.2x**	**7.8x**	**7.5x**	**7.1x**	**6.5x**

Gazprom

Investment case

We note that Gazprom stock has been de-rated despite a significant dividend yield improvement over the last several years. We believe suboptimal capital allocation, weak FCF generation and Ukraine risk are the key depressing factors. The stock currently trades on 12-month forward PE of 2.5x and offers 6.4% yield. We acknowledge Gazprom's inefficiencies. However, we forecast gas exports are likely to recover driven by Gazprom's competitive pricing, EU gas re-stocking and EU domestic production decline. We believe that upcoming reduction in oil-linked gas export prices is already reflected in the current valuations. The pace of the market share shrinkage in Russia has visibly slowed down. The reduction of Central Asia gas trading is margin accretive. The peak of the investment cycle is now behind us. Management has recommended a higher dividend payout, effectively making an adjustment for non-cash FX losses to maintain its dividend. We find management's decision encouraging as it adds credibility to our forecast of a dividend yield of 5% in 2015. We expect the company to change its dividend policy next year, switching dividend base to IFRS consolidated earnings leading to material improvement in dividend yield. In our view, probable capex rationalizations and dividend improvement are likely to be key short-term value drivers for Gazprom. We think Ukraine risk has been de-escalating after Minsk 2.0 agreements. We think rising gas transit to Europe via Ukraine confirm our view.

Financial and operational outlook

We estimate that 2016 cash neutrality is achieved at $69/bbl. We expect capex is likely to hike next year as spending on China pipeline accelerates. However, we note that Gazprom has accumulated $20bn on the balance sheet and gearing was 12% in 2Q15. Therefore, we do not expect cash liquidity issues in the short term. We forecast gas production will decline in Russia as we expect domestic gas consumption to decrease in spite of lower gas pricing in USD. We forecast a gas glut in Russia. We believe Gazprom prioritizing growing Asian gas markets in its strategy over European gas sales makes sense given Europe's strategy of reducing dependency on Russian energy. We expect Gazprom production returns to growth after 2018 on the back of gas export to China.

Upside scenario

Gazprom is less sensitive to the oil price change compared to Russian oil companies. $1/bbl higher oil price generates just 1% EPS upside. Weaker RUB is positive for free cash flows. Our upside scenario includes additional capex cuts, opex rationalizations and earlier switching a dividend base to IFRS consolidated earnings from RAS unconsolidated profit. We currently forecast Gazprom to fully realize Turkish Stream (build all four lines) redirecting 63bcm/y from Ukraine transit route by 2022. However, the company may only build one direct line to Turkey under the Black Sea and delay the other three lines. Under this scenario, Gazprom may save up to $15bn on capex and up to $500m on transportation cost per annum. If Gazprom delivers both capex reduction and dividend improvement, it will open the door for further stock rerating, in our view. Under this scenario, Gazprom should trade with 35% premium to its historical valuation multiple, an upside scenario fair value of $8.0 per share.

Downside scenario

The key risk to our positive view on the stock is a decline in production and capex overrun. Should Gazprom overspend on capex, valuation premium would not be justified and the stock could lose 15% from the current level, we estimate. Escalation of the situation in Ukraine may put pressure on the stock. We note EU antitrust investigation is ongoing and may result in fine against Gazprom. Historically, $4.0 has been a support level for the stock, and this would imply EV/EBITDA multiple of 2.0x. Our most conservative DDM valuation is $5.5 per ADR.

Catalysts

28 Sept 2015	Respond to EC's Statement of Objections
4Q 2015	Agreement with Turkey on the Turkish Stream
2016	Change in dividend policy: switching dividend base to IFRS net income

Valuation

Our price target of $6.0 (cut from $6.8) is 50/50 based on DCF (WACC=13% and zero terminal growth rate) and 12-month target EV/EBITDA of 2.7x. We rate Gazprom a Buy.

Gazprom — Price target: $6.0 — Upside: 43% — Buy

Share data				
Mkt cap ($ bn)	49.6	% of MSCI Russia		19.57%
Mkt cap ($ bn)	49.6	% of MSCI Energy		1.02%
Price ($)	4.2	% of MSCI World		0.12%
12m high	7.6	Daily trading volume (m)		18.33
12m low	3.7	Free float		46.7%
RIC code (ADR)	GAZPq.L	Major shareholders	Rosimushestvo	38.37%
Bloomberg code	OGZD LI		Treasury shares	3.05%
ADR ratio	10		Other state-owned	11.86%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	9472	8794	8665	8671	8760	8709	8881
Growth	1%	-7%	-1%	0%	1%	-1%	2%
Ref thru'puts (000 b/d)	856	867	841	866	892	919	946
Growth	1%	1%	-3%	3%	3%	3%	3%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	**109.65**	**99.25**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
Rb/$	**32.73**	**56.26**	**65.00**	**60.00**	**55.00**	**50.00**	**50.00**
Adj Operating Income	**49,696**	**34,808**	**24,321**	**26,721**	**32,785**	**35,797**	**37,599**
Net interest	(294)	520	422	(104)	(457)	(563)	(396)
Other financial	1,779	1,485	1,204	1,260	1,316	1,373	1,429
Other items	(4,660)	(24,786)	(3,856)	2,089	2,037	2,224	0
Pretax profit	**46,521**	**12,027**	**22,090**	**29,966**	**35,681**	**38,830**	**38,632**
Tax	(10,059)	(4,523)	(5,144)	(5,993)	(7,136)	(7,766)	(7,726)
Minorities	(830)	(83)	(152)	(207)	(246)	(268)	(267)
Rep Net Income	**35,632**	**7,421**	**16,794**	**25,856**	**30,335**	**33,020**	**30,639**
Adj Net Income	**35,632**	**7,421**	**16,794**	**23,766**	**28,298**	**30,796**	**30,639**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	11,836.8	11,836.8	11,836.8	11,836.8	11,836.8	11,836.8	11,836.8
EPS	3.01	0.63	1.42	2.18	2.56	2.79	2.59
Adj EPS	3.01	0.63	1.42	2.01	2.39	2.60	2.59
Adj CEPS	4.89	3.97	2.47	2.52	2.97	3.41	3.44
DPS (net)	0.45	0.37	0.25	0.50	0.60	0.65	0.65
EPS/ADR	$3.01	$0.63	$1.42	$2.18	$2.56	$2.79	$2.59
Adj EPS/ADR	$3.01	$0.63	$1.42	$2.01	$2.39	$2.60	$2.59
Adj CEPS/ADR	$4.89	$3.97	$2.47	$2.52	$2.97	$3.41	$3.44
DPS (net)/ADR	$0.45	$0.37	$0.25	$0.50	$0.60	$0.65	$0.65
Pay out ratio (EPS)	15%	60%	18%	25%	25%	25%	25%
Pay out ratio (Adj CEPS)	9%	9%	10%	20%	20%	19%	19%
Tax rate	22%	38%	23%	20%	20%	20%	20%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	35,632	7,421	16,794	25,856	30,335	33,020	30,639
DD&A	13,156	12,440	7,663	8,502	9,359	10,071	10,676
Exploration	0	0	0	0	0	0	0
Minority adjustment	830	83	152	207	246	268	267
Other non-cash items	16,155	35,923	7,848	2,748	4,241	4,733	6,693
Working capital	(11,223)	(5,959)	(1,519)	(4,637)	(9,595)	(9,822)	(8,520)
Net cashflow from ops	**54,550**	**49,907**	**27,082**	**32,676**	**34,585**	**38,269**	**39,755**
Disposals	(102)	(631)	0	0	0	0	0
Shares Issued	0	0	0	0	0	0	0
Sources	**54,448**	**49,276**	**27,082**	**32,676**	**34,585**	**38,269**	**39,755**
Capex	(45,882)	(35,695)	(27,642)	(31,570)	(30,653)	(26,378)	(27,109)
Acquisitions	(4,366)	(4,082)	(500)	(500)	(500)	(500)	(500)
Dividends	(4,309)	(4,938)	(3,099)	(2,964)	(5,942)	(7,075)	(7,699)
Parent shares purchased	5	(0)	0	0	0	0	0
Other	3,243	1,844	1,565	1,092	793	741	962
Applications	**(51,308)**	**(42,871)**	**(29,676)**	**(33,942)**	**(36,302)**	**(33,211)**	**(34,346)**
Cash surplus/(deficit)	3,140	6,216	(2,594)	(1,266)	(1,717)	5,058	5,408
FX/other	(1,328)	(2,090)	0	0	0	0	0
Decrease in net debt	**1,812**	**4,127**	**(2,594)**	**(1,266)**	**(1,717)**	**5,058**	**5,408**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	33,238	29,112	31,706	32,971	34,688	29,630	24,222
Equity	284,742	174,486	188,180	208,982	231,339	255,061	278,001
Capital employed	317,980	203,597	219,886	241,954	266,027	284,691	302,223
Net debt/Equity	12%	17%	17%	16%	15%	12%	9%
Net debt/Net debt & Equity	10%	14%	14%	14%	13%	10%	8%
NAV	26.9	17.2	18.6	20.4	22.5	24.1	25.5
ROAE	13%	3%	9%	12%	13%	13%	11%
ROACE	12%	3%	8%	10%	11%	11%	10%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	99,899	86,845	49,626	49,626	49,626	49,626	49,626
Core net debt (inc. associates)	34,145	31,175	30,409	32,339	33,830	32,159	29,455
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Less: Peripheral assets	0	0	0	0	0	0	0
EV	**134,044**	**118,020**	**80,034**	**81,964**	**83,455**	**81,785**	**79,081**
Net income before minorities	36,462	7,504	16,946	23,973	28,545	33,288	30,906
DDA + exploration	13,156	12,440	7,663	8,502	9,359	10,071	10,676
Other group non-cash items	8,991	27,590	5,056	(2,089)	(2,037)	(2,224)	(0)
Core associates non-cash items	(1,779)	(1,485)	(1,204)	(1,260)	(1,316)	(1,373)	(1,429)
Core post-tax interest + pension cost	1,074	934	770	675	614	579	525
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**57,904**	**46,983**	**29,231**	**29,800**	**35,165**	**40,341**	**40,677**
EV/DACF	**2.3x**	**2.5x**	**2.7x**	**2.8x**	**2.4x**	**2.0x**	**1.9x**

Hess Corporation

Investment Case

HES has emerged from its restructuring plan to exit the downstream business, completing its asset sale program which has enabled >$2 billion in net debt reduction, an increased dividend and a $6.5 billion share buyback program. This strategy has re-positioned HES as a more focused pure-play E&P with a higher, more predictable and capital efficient growth outlook. Relative to peers, we see HES as more defensively positioned for a low oil price environment given its modest financial leverage and robust liquidity position. Despite its improved growth outlook and stronger balance sheet, HES trades at a ~2x discount to global peers on 2015-16E DACF, wider than its historical ~1.2x discount. Our $73 price target assumes 5.0x normalized 2016E DACF, or 0.85x NAV.

Financial and Operational Outlook

HES has reduced its capital program from $5.6 billion in 2014 to $4.4 billion in 2015 and has indicated it will likely further reduce capital next year. Importantly, management has indicated a ~$3.5-$4.0 billion budget next year (in line with its 2H15 run rate), and it expects to generate roughly flat to low single YoY production growth as flat YoY Bakken volumes should be accompanied by a full year of production near peak capacity from Tubular Bells (40 MBoed vs. 25-30 MBoed this year). We forecast a decline in capex to $3.5 billion (consensus is $3.9 billion), leading to a $1 billion free cash flow deficit at strip and flat YoY production growth.

Upside Scenario

Our upside case assumes a faster than expected oil price recovery enables HES to accelerate medium-term growth plans and revise its longer term production growth target to the high end of its stale +6-10% per annum guidance. Under this scenario, we see HES' normalized 2016 EV/DACF multiple appreciating to ~6x, more in line with its higher-growth global peers and implying upside to ~$90/share.

Downside Scenario

Our downside case assumes HES misses medium-term production targets and fails to generate cash flow/capex breakeven. Under this scenario, we see HES' EV/DACF multiple contracting to ~4.0x, a full turn below its historical average. This would generate a downside target of $55/share.

Catalysts

2015: IPO for Bakken midstream MLP

Late 2015 to early 2016: Bakken downspacing results

Valuation

HES trades at a ~2 turn discount to peers on EV/DACF despite competitive growth. Our $73 price target assumes 5.0x normalized 2016E DACF (in line with historical average), or 0.85x NAV.

Hess Corp. Price target: $73 Upside: 30% Buy

Share data				
Mkt cap ($ bn)	16.2	% of S&P 500		0.15%
Mkt cap ($ bn)	16.2	Daily trading volume (m)		1.02
Price ($)	56.4	Free float		85.0%
12m high	100.99	Major shareholders	Elliott Mgmt. Corp.	6.2%
12m low	49.94		The Vanguard Group	5.0%
RIC code	HES.N		T. Rowe Price	4.8%
Bloomberg code	HES US			

Operating	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Total production (000 boe/d)	337	329	372	372	387	416	427
Growth	-17%	-2%	13%	0%	4%	8%	3%
Oil production (000 bbl/d)	242	244	272	270	272	288	297
Growth	-20%	0%	12%	-1%	1%	6%	3%
Gas production (000 mcf/d)	565	513	597	608	688	766	784
Growth	-8%	-9%	16%	2%	13%	11%	2%

Profit & Loss ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
WTI $/bbl	**98.02**	**92.89**	**49.00**	**52.50**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Net income	4,303	2,098	(1,333)	(821)	(182)	28	288
Downstream Net income	1,176	579	0	0	0	0	0
Total Net income	**5,479**	**2,677**	**(1,216)**	**(671)**	**(21)**	**200**	**472**
Corporate	(182)	(155)	(133)	(135)	(142)	(135)	(147)
Interest expense	(244)	(202)	(210)	(212)	(210)	(210)	(210)
Adj Net income	**1,914**	**1,308**	**(1,056)**	**(1,018)**	**(373)**	**(145)**	**115**
Special items	3138.6	1012	-503	0	0	0	0
Rep Net Income	**5,053**	**2,320**	**(1,559)**	**(1,018)**	**(373)**	**(145)**	**115**

Per Share	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
No. shares (avg)	341	308	285	287	287	287	287
EPS	$5.68	$4.31	($3.74)	($3.60)	($1.32)	($0.51)	$0.41
Adj EPS	$5.61	$4.25	($3.70)	($3.55)	($1.30)	($0.50)	$0.40
Adj CEPS	$18.54	$16.23	$8.30	$10.05	$14.60	$16.55	$18.40
DPS (net)	$0.70	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00
Pay out ratio (EPS)	12%	24%	NA	NA	-77%	-198%	250%
Pay out ratio (Adj CEPS)	4%	6%	12%	10%	7%	6%	5%
Tax rate	14%	30%	46%	46%	46%	46%	46%

Cash Flow ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net Income	5,222	2,374	(1,586)	(1,018)	(373)	(145)	115
DD&A	2,770	3,224	3,947	4,124	4,288	4,613	4,743
Exploration	344	508	264	277	289	310	315
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	(2,013)	(1,111)	(256)	(498)	(14)	(29)	110
Working capital/other	(1,453)	(531)	(334)	0	0	0	0
Net cashflow from ops	**4,870**	**4,464**	**2,034**	**2,885**	**4,190**	**4,750**	**5,283**
Disposals	6,642	2,978	3,015	50	50	50	50
Shares issued	0	0	0	0	0	0	0
Sources	**11,512**	**7,442**	**5,049**	**2,935**	**4,240**	**4,800**	**5,333**
Capex	(5,840)	(5,274)	(4,100)	(3,500)	(4,140)	(4,524)	(4,524)
Acquisitions	0	0	0	0	0	0	0
Dividends	(236)	(304)	(282)	(283)	(283)	(283)	(283)
Shares purchased	(1,493)	(3,715)	(78)	0	0	0	0
Other	(288)	2,472	90	0	0	0	0
Applications	**(7,857)**	**(6,821)**	**(4,370)**	**(3,783)**	**(4,423)**	**(4,807)**	**(4,807)**
Cash surplus/(deficit)	3,656	622	676	(848)	(183)	(7)	526
FX/other	(7,640)	(181)	(4)	0	0	0	0
Decrease in net debt	**(3,984)**	**441**	**672**	**(848)**	**(183)**	**(7)**	**526**

Balance Sheet ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net debt	3,984	3,543	2,871	3,720	3,903	3,910	3,385
Equity	24,784	22,320	20,331	19,031	18,374	17,946	17,778
Capital employed	28,768	25,863	23,203	22,750	22,278	21,857	21,163
Net debt/equity	16%	16%	14%	20%	21%	22%	19%
Net debt/Net debt & Equity	14%	14%	12%	16%	18%	18%	16%
NAV	84.4	84.1	81.3	79.3	77.6	76.1	73.7
ROAE	20.4%	10.4%	-7.7%	-5.3%	-2.0%	-0.8%	0.6%
ROACE	7.4%	5.2%	-3.1%	-3.1%	-0.6%	0.3%	1.3%

EV Valuation ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Market capitalisation	24,458	26,416	15,918	15,950	15,950	15,950	15,950
Core net debt (inc. associates)	5,349	3,731	3,589	3,520	4,038	4,134	3,872
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**29,807**	**30,147**	**19,506**	**19,470**	**19,988**	**20,084**	**19,822**
Net income before minorities	5,222	2,374	(1,586)	(1,018)	(373)	(145)	115
DD&A + exploration	3,027	3,759	4,211	4,401	4,577	4,923	5,058
Other group non-cash items	161	243	(790)	(500)	(14)	(29)	110
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	244	202	210	212	210	210	210
less: peripheral income/cash flow	(2,087)	(1,465)	534	2	0	0	0
DACF	**6,567**	**5,113**	**2,578**	**3,097**	**4,400**	**4,960**	**5,493**
EV/DACF	**4.5x**	**5.9x**	**7.6x**	**6.3x**	**4.5x**	**4.0x**	**3.6x**

Husky Energy

Investment case

Husky presents an attractive combination of defensive characteristics and growth. The company boasts a conservative balance sheet, manageable funding gap, and competitive growth while trading at a discount to the peer group. We expect Husky to deliver production growth of 6% through 2018, in-line with the integrated average, driven by production additions at Sunrise and its low cost thermal developments which offer scalable supply costs of ~$45/bbl (WTI). Importantly, forecasted production growth is expected to lower the company's cost structure significantly. Cash costs are expected to decline over the coming years, driven by lower cost production adds displacing high operating cost production and better utilization of high fixed cost assets in Atlantic Canada. Additionally, increased production from long-life low-decline assets is expected to lower the company's decline rate further resulting in lower sustaining capital requirements. In aggregate we believe HSE's sustaining capital requirements will fall from $3.0 billion currently to $2.5 billion by 2017. We rate HSE a Buy with a Price Target of $28, or 9.0x our 2016E DACF.

Financial and operational outlook

HSE is in good financial shape with 2015E Net Debt/Capitalization of 17% and Net Debt/Cash Flow of 1.9x. Importantly, the company has ample liquidity and its main growth assets, its thermal developments, boast supply costs of $45/bbl (WTI). We estimate that 2016 cash neutrality is achieved at $55/bbl, though we note this contains some growth spending, and estimate the company is capable of funding its sustaining capital and dividend at an oil price down to $50/bbl. We estimate Net Debt/Cap peaks in 2017 at 26% as the company continues to invest in its growth projects which will displace higher cost conventional production. Similarly, we expect capex to slowly increase from its current level of $3.1 billion to $3.9 bn in 2018 and 5-year production growth (2015-2020) of 4% driven by additions from its thermal developments as well as Asian gas volumes.

Upside scenario

Our upside case assumes HSE develops a deeper inventory of thermal projects, providing a solid growth platform for the next decade. As a result the perception around the company's resource base improves and it trades in-line with the peer group. We raise our target multiple by 1.0x to 10.0x. Assuming this multiple – and a $0.50/MMBtu increase in natural gas prices and a $5.00/Bbl increase WTI prices (as well as a $2/bbl decrease in the WTI/WCS differential) – implies upside to ~$39/share.

Downside scenario

Our downside case assumes HSE is not able to successfully develop its Sunrise development or any additional thermal projects. As a result the company's average 2015-2018 debt adjusted cash flow per share growth decreases, as well as the longer term potential for growth. We lower our target multiple by 1.0x to 8.0x. Assuming this multiple – and a $0.50/MMBtu decrease in natural gas prices and a $2.00/Bbl decrease in WTI prices (as well as a $2/bbl increase in the WTI/WCS differential) – implies downside to ~$20/share.

Catalysts

2015 Quarterly results: We believe there is downside to the company's capital spending guidance and cost guidance

2015 September field tour of Sunrise and Heavy Oil developments and further details on incremental thermal development opportunities

2015/2016 Continued ramp of Sunrise 2015

2016 Potential sanctioning of West White Rose

Valuation

Husky is currently trading at 6.9x/5.8x our 2016/2017 DACF estimates, a 24%/13% discount to the integrated peer group average, despite a comparable growth profile. Our $28 price target (down from $29) assumes 9.0x 2016E DACF, a 21% discount to the peer group, balancing higher forecasted DACFPS growth with an inferior long-term inventory of growth assets.

Husky Energy — Price target: $28 — Upside: 27% — Buy

Share data				
Mkt cap ($ bn)	21.7	% of TSX 60		0.52%
Mkt cap ($ bn)	16.3	% of MSCI Energy		0.25%
Price ($)	22.1	Daily trading volume (m)		1.15
12m high	33.24	Free float		30.4%
12m low	21.61	Major shareholders	Li Ka-Shing	69.5%
RIC code	HSE.TO		IG Investment	2.8%
Bloomberg code	HSE CN		RBC AM	1.9%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	312	338	353	380	400	430	422
Growth	3%	8%	4%	8%	5%	7%	-2%
Ref thru'puts (000 b/d)	251	243	229	250	250	250	250
Growth	0%	-3%	-6%	9%	0%	0%	0%

Profit & Loss (C$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	97.99	93.01	48.98	52.51	65.00	70.00	75.00
US Natural Gas Price $/mcf	3.65	4.45	2.85	3.25	3.75	4.00	4.00
E&P	1,396	1,429	(429)	23	957	1,054	1,195
R&M	1,581	640	752	776	643	535	685
Corporate & Other	(251)	(207)	(148)	(144)	(144)	(144)	(144)
Operating Profit	2,726	1,862	174	655	1,456	1,445	1,737
Other income & Associates	0	0	0	0	0	0	0
Net interest	(118)	(225)	(206)	(177)	(158)	(170)	(133)
FX	0	0	0	0	0	0	0
Other	20	147	139	0	0	0	0
Pre-tax Profit	2,628	1,784	107	478	1,298	1,275	1,604
Tax	(799)	(526)	83	(143)	(390)	(383)	(481)
Minorities	0	0	0	0	0	0	0
Rep Net income	1,829	1,258	190	335	909	893	1,123
Special items	205	774	(203)	0	0	0	0
Adj Net income	2,034	2,032	(13)	335	909	893	1,123

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	984	986	984	984	985	985	986
EPS	1.86	1.28	0.19	0.34	0.92	0.91	1.14
Adj EPS	2.07	2.06	-0.01	0.34	0.92	0.91	1.14
Adj CEPS	4.74	4.77	3.50	4.02	4.88	5.13	5.30
DPS (net)	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Pay out ratio (EPS)	58%	58%	nm	360%	133%	135%	108%
Pay out ratio (Adj CEPS)	25%	25%	35%	30%	25%	24%	23%
Tax rate	30%	29%	-77%	30%	30%	30%	30%

Cash Flow (C$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	1,829	1,258	190	335	909	893	1,123
DD&A	3,005	4,010	3,529	3,553	3,706	3,948	3,885
Exploration	10	6	92	160	200	250	250
Other non-cash items	(178)	(569)	(372)	(91)	(12)	(33)	(28)
Working capital	(21)	880	(204)	0	0	0	0
Net cashflow from ops	4,645	5,585	3,235	3,957	4,803	5,057	5,230
Disposals	37	134	1	0	0	0	0
Shares issued	27	1	0	0	0	0	0
Sources	4,709	5,720	3,236	3,957	4,803	5,057	5,230
Capex	(5,028)	(5,091)	(3,077)	(3,030)	(3,873)	(4,125)	(3,942)
Acquisitions	0	0	0	0	0	0	0
Dividends	(1,184)	(1,182)	(1,203)	(1,206)	(1,206)	(1,207)	(1,207)
Other	580	709	(249)	0	0	0	0
Applications	(5,632)	(5,564)	(4,528)	(4,235)	(5,079)	(5,331)	(5,150)
Cash surplus/(deficit)	(923)	156	(1,292)	(278)	(276)	(274)	81
FX/other	(27)	(1,585)	(1,353)	264	-112	1,391	-767
Decrease in net debt	(950)	(1,429)	(2,645)	(15)	(388)	1,117	(686)

Balance Sheet (C$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	2,357	3,786	6,431	6,446	6,834	5,717	6,403
Equity	20,078	19,975	19,762	18,869	18,479	19,683	19,184
Capital employed	22,435	23,761	26,193	25,315	25,312	25,400	25,587
Net debt/equity	12%	19%	33%	34%	37%	29%	33%
Net debt/Net debt & Equity	11%	16%	25%	25%	27%	23%	25%
NAV	22.8	24.1	26.6	25.7	25.7	25.8	26.0
ROAE	9.3%	6.3%	-0.1%	1.7%	4.9%	4.7%	5.8%
ROACE	8.1%	5.6%	0.9%	1.9%	4.3%	4.2%	5.0%

EV Valuation (C$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	29,356	31,569	21,727	21,737	21,748	21,759	21,770
Core net debt (inc. associates)	2,357	3,786	6,431	6,446	6,834	5,717	6,403
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	31,713	35,355	28,158	28,183	28,581	27,475	28,172
Net income before minorities	1,829	1,258	(13)	335	909	893	1,123
DD&A + exploration	3,015	4,016	3,621	3,713	3,906	4,198	4,135
Other group non-cash items	(178)	-569	-169	-91	-12	-33	-28
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	(89)	(169)	(155)	(133)	(118)	(128)	(100)
less: peripheral income/cash flow	177	338	309	265	237	255	200
DACF	4,755	4,874	3,594	4,089	4,922	5,184	5,330
EV/DACF	6.7x	7.3x	7.8x	6.9x	5.8x	5.3x	5.3x
EV/DACF $	6.7x	7.3x	7.6x	6.6x	5.3x	4.6x	4.6x

Imperial Oil

Investment case

We believe Imperial is well positioned for the current environment, with a low cost structure, significant production growth from low-cost brownfield expansion at its Kearl development, and dramatic growth in forecasted free cash flow. We forecast free cash flow to grow to $1.5 billion annually by 2018 based on UBS price forecasts ($75/bbl WTI), compared to current dividend obligations of $475 million and expect returning cash to shareholders will be a priority as the free cash flow outlook improves. Finally, we believe the potential spinout of its retail operations provides valuable financial flexibility, with estimated proceeds in the $500 - $1 billion range. With this in mind, we believe the company's valuation is reasonable and see limited near term upside to the share price in the context of its valuation, which is the richest in the sector. We rate IMO a Sell with a Price Target of $47, or 13.4x 2016E DACF.

Financial and operational outlook

IMO is in good financial shape with 2015E Net Debt/Capitalization of 16% and Net Debt/Cash Flow of 2.7x. Importantly, the company has ample liquidity and no financial restrictions on its debt. We estimate that 2016 cash neutrality is achieved at $57/bbl, though we note this contains significant growth spending, and estimate the company could fund its sustaining capital and dividend at an oil price down to $50/bbl. We estimate Net Debt/Cap peaks in 2015 at 26% as spending on the company's Kearl/Nabiye projects wind down and associated cash flows come on stream. Similarily, we expect capex to fall from a peak of $6.3 bn in 2013 to $3.0 bn in 2016 and 5-year production growth (2015-2020) of 7% driven by additions from Horizon and potentially in-situ volumes.

Upside scenario

Our upside case assumes IMO successfully debottlenecks Kearl for 10% below current capital guidance and ahead of the current scheduled date of 2017. As a result the company's average 2015-2018 debt adjusted cash flow per share growth increases, free cash flow rises sooner, and we raise our target multiple by 1.0x to 13.8x. Assuming this multiple – and a $0.50/MMBtu increase in natural gas prices and a $5.00/Bbl increase WTI prices (as well as a $2/bbl decrease in the WTI/WCS differential) – implies upside to ~$68/share.

Downside scenario

Our downside case assumes IMO debottlenecking at Kearl is delayed by 12 months to 2018. As a result the company's average 2015-2018 debt adjusted cash flow per share growth decreases, free cash flow growth is pushed to 2019, and we lower our target multiple by 1.0x to 11.8x. Assuming this multiple – and a $0.50/MMBtu decrease in natural gas prices and a $5.00/Bbl decrease in WTI prices (as well as a $5/bbl decrease in the WTI/WCS differential) – implies downside to ~$32/share.

Catalysts

2015 Ramp up of Nabiye which is expected to add 40 mbpd by year-end.

2015 Continued ramp of the Kearl expansion project (78 mbpd net capacity)

2015 Further details on debottlenecking potential at Kearl are expected later this year, and could result in incremental capacity beyond the current 156 mbpd.

2015 Further details on the Aspen in-situ project are expected later this year, beyond initial projection of 2017 construction/2020 first oil.

Valuation

At 11.5x 2016E DACF, IMO shares trade at a 27% premium to the integrated peer group, in line with its historical average of 30%. Our $47 price target assumes 13.4x 2016E DACF (10.6x excluding ARO), a 17% premium to the integrated peer group, reflecting a more positive view on oil prices.

Imperial Oil | Price target: $47 | Upside: 8% | Sell

Share data				
Mkt cap ($ bn)	37.1	% of TSX 60		0.89%
Mkt cap ($ bn)	27.9	% of MSCI Energy		0.43%
Price ($)	43.7	Daily trading volume (m)		0.74
12m high	56.72	Free float		30.4%
12m low	42.36	Major shareholders	ExxonMobil	69.6%
RIC code	IMO.TO		Fidelity	2.1%
Bloomberg code	IMO CN		Artisan Partners	2.0%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	294	310	381	445	453	477	497
Growth	4%	5%	23%	17%	2%	5%	4%
Ref thru'puts (000 b/d)	251	243	229	250	250	250	250
Growth	0%	-3%	-6%	9%	0%	0%	0%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**97.99**	**93.01**	**48.98**	**52.51**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P	2,111	2,058	(840)	149	1,796	2,091	2,800
R&M	1,344	2,054	2,405	2,138	1,877	1,689	1,689
Chemicals	221	310	370	364	363	363	363
Corporate & Other	79	603	36	20	20	20	20
Operating Profit	**3,755**	**5,025**	**1,970**	**2,671**	**4,056**	**4,163**	**4,872**
Other income & Associates	0	0	0	0	0	0	0
Net interest	(11)	(4)	(39)	(80)	(15)	(12)	(10)
FX	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Pre-tax Profit	**3,744**	**5,021**	**1,931**	**2,591**	**4,040**	**4,151**	**4,862**
Tax	(909)	(1,236)	(809)	(648)	(1,010)	(1,038)	(1,216)
Minorities	0	0	0	0	0	0	0
Rep Net income	**2,835**	**3,785**	**1,122**	**1,943**	**3,030**	**3,113**	**3,647**
Special items	0	(1)	318	0	0	0	0
Adj Net income	**2,835**	**3,784**	**1,440**	**1,943**	**3,030**	**3,113**	**3,647**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	851	851	848	848	848	848	848
EPS	3.33	4.45	1.32	2.29	3.58	3.67	4.30
Adj EPS	3.33	4.45	1.70	2.29	3.58	3.67	4.30
Adj CEPS	5.03	6.24	3.41	4.55	6.07	6.27	7.07
DPS (net)	0.49	0.52	0.54	0.60	0.66	0.73	0.76
Pay out ratio (EPS)	14%	12%	32%	26%	18%	20%	18%
Pay out ratio (Adj CEPS)	10%	8%	16%	13%	11%	12%	11%
Tax rate	24%	25%	42%	25%	25%	25%	25%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	2,835	3,785	1,120	1,943	3,030	3,113	3,647
DD&A	1,110	1,096	1,457	1,588	1,608	1,679	1,740
Exploration	0	0	0	0	0	0	0
Other non-cash items	332	427	369	324	505	519	608
Working capital	(978)	(903)	0	0	0	0	0
Net cashflow from ops	**3,299**	**4,405**	**2,946**	**3,855**	**5,143**	**5,312**	**5,994**
Disposals	0	814	90	0	0	0	0
Shares issued	0	0	0	0	0	0	0
Sources	**3,299**	**5,219**	**3,036**	**3,855**	**5,143**	**5,312**	**5,994**
Capex	(6,289)	(5,587)	(3,568)	(2,991)	(3,236)	(3,788)	(3,971)
Acquisitions	(1,442)	0	0	0	0	0	0
Dividends	(407)	(441)	(458)	(509)	(559)	(615)	(646)
Other	0	0	0	0	0	0	0
Applications	**(8,138)**	**(6,028)**	**(4,026)**	**(3,500)**	**(3,796)**	**(4,403)**	**(4,617)**
Cash surplus/(deficit)	(4,839)	(809)	(990)	355	1,347	908	1,377
FX/other	100	417	313	0	0	0	0
Decrease in net debt	**(4,739)**	**(392)**	**(677)**	**355**	**1,347**	**908**	**1,377**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	7,213	7,605	8,282	7,927	6,580	5,671	4,295
Equity	19,388	22,530	23,062	24,431	26,836	29,264	32,192
Capital employed	26,601	30,135	31,344	32,359	33,416	34,936	36,487
Net debt/equity	37%	34%	36%	32%	25%	19%	13%
Net debt/Net debt & Equity	27%	25%	26%	24%	20%	16%	12%
NAV	31.3	35.4	36.9	38.2	39.4	41.2	43.0
ROAE	15.9%	18.1%	6.3%	8.2%	11.8%	11.1%	11.9%
ROACE	12.5%	14.4%	5.2%	6.9%	10.0%	9.8%	10.9%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	36,512	44,394	37,057	37,057	37,057	37,057	37,057
Core net debt (inc. associates)	7,213	7,605	8,282	7,927	6,580	5,671	4,295
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**43,725**	**51,999**	**45,339**	**44,984**	**43,637**	**42,728**	**41,352**
Net income before minorities	1,810	3,351	(281)	418	1,484	1,492	1,962
DD&A + exploration	1,110	1,096	1,457	1,588	1,608	1,679	1,740
Other group non-cash items	332	427	369	324	505	519	608
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	(8)	(3)	(29)	(60)	(12)	(9)	(7)
less: peripheral income/cash flow	1,042	440	1,459	1,645	1,569	1,639	1,699
DACF	**4,285**	**5,311**	**2,975**	**3,915**	**5,155**	**5,321**	**6,001**
EV/DACF	**10.2x**	**9.8x**	**15.2x**	**11.5x**	**8.5x**	**8.0x**	**6.9x**
EV/DACF $	**10.2x**	**9.8x**	**14.7x**	**11.0x**	**7.6x**	**6.9x**	**5.9x**

Lukoil

Investment case

We think Lukoil has been perceived as a shareholder 'safe haven' due to its sustainable dividend growth practice. However, it looks like the long-standing problems that weighed on the stock previously, including production decline in Russia, have been returning. Production decline this year is increasingly visible as production ramp-up from Caspian projects has been delayed while production decline in West Siberia accelerates on the back of reduced drilling. Lukoil is looking to enter Eastern Siberia oil province and may get an access to Russian Arctic continental shelf as the government changes relative legislation. We currently do not forecast risky and potentially expensive exploration projects for Lukoil in Russia. In Iraq, Lukoil expects Iraqi government to fully reimburse costs of West Qurna-2 first stage by the end of this year and is negotiating a delay for the second stage of the project with Iraqi government. While we believe that Lukoil is likely to maintain its minimum 15% pa nominal growth in DPS, we foresee company's free cash flows are likely to be under pressure given its exposure to domestic downstream weakness, risky investments in overseas E&P projects and potential start-up of expensive exploration on the Russian continental shelf. Therefore, negative dividend revision becomes increasingly likely to us.

Financial and operational outlook

We estimate that 2016 cash neutrality is achieved at $66/bbl. Sale of Caspian Investment Resources to Sinopec as well as new borrowings should help the company to manage cash liquidity amid weak oil prices in 2H15-2016. On our numbers, Lukoil will need to borrow $2bn to fix balance sheet in 2017. Given company's clean balance sheet (2Q15 gearing is 11%) we do not think it will be an issue. We forecast oil production is likely to grow next year driven by launch of Imilorskoye and Filanovskogo fields. However, given a severe upstream capex reduction production decline may accelerate in West Siberia. Production upside is limited for Lukoil after 2017 based on current reserve base, we estimate.

Upside scenario

$1/bbl higher oil price generates 4% EPS upside. Weaker RUB is also positive for EPS and free cash flow given company's high share of RUB denominated costs. We see an upside scenario from faster production growth from profitable Caspian projects, more gradual production decline from West Siberia brownfields and taxation breaks lasting longer than we currently forecast. Under this scenario we would expect about a 15% upside to our price target, pushing fair value to $43 per share.

Downside scenario

Reduction in FY15 dividends, initiation of new capital intensive projects outside of Russia and risks of production decline represent negative scenario for Lukoil. The stock currently trades at historical high forward EV/EBITDA and P/E multiples – so return back to historical average level would suggest about 20-30% downside. A 3-year trough EV/EBITDA of 2.0 would give a price per share of $27.

Catalysts

2015	Announcement of 2015 interim dividends
2016	Start-ups: Imilorskoye and Filanovskogo fields

Valuation

Our price target of $37 (cut from $50) is 50/50 based on DCF ($80/bbl long-term oil price, WACC=14% and zero terminal growth rate) and 12-month target EV/EBITDA of 3.0x. We reiterate our Neutral view on Lukoil.

Lukoil   Price target: $37   Upside: 2%   Neutral

Share data			
Mkt cap ($ bn)	27.4	% of MSCI Russia	14.82%
Mkt cap ($ bn)	27.4	% of MSCI Energy	0.77%
Price ($)	36.3	% of MSCI World	0.08%
12m high	58.5	Daily trading volume (m)	2.12
12m low	32.6	Free float	48.8%
RIC code (ADR)	LKOHyq.L	Major shareholders: Vagit Alekperov	22.5%
Bloomberg code	LKOD LI	Leonid Fedun	9.8%
ADR ratio	1	Treasury shares	11.3%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	2153	2291	2369	2267	2444	2493	2566
Growth	2%	6%	3%	-4%	8%	2%	3%
Ref thru'puts (000 b/d)	1175	1219	1219	1352	1356	1356	1356
Growth	-15%	4%	0%	11%	0%	0%	0%
Product sales (000 b/d)	2410	2429	2486	2502	2509	2509	2509
Growth	4%	1%	2%	1%	0%	0%	0%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	109.65	99.25	55.00	57.50	70.00	75.00	80.00
Rb/$	31.84	38.41	60.08	62.50	57.50	52.50	50.00
Adj Operating Income	10,247	7,126	4,957	5,722	9,723	9,853	10,647
Net interest	(249)	(362)	(358)	(289)	(414)	(412)	(321)
Other financial	575	552	241	410	459	514	575
Other items	(115)	(544)	(806)	0	0	0	0
Pretax profit	10,458	6,772	4,035	5,843	9,768	9,955	10,901
Tax	(2,831)	(2,058)	(853)	(1,169)	(1,954)	(1,991)	(2,180)
Minorities	205	32	(38)	(50)	(50)	(50)	(50)
Adj Net Income	7,832	4,746	3,144	4,624	7,765	7,914	8,671
Special items	0	0	0	0	0	0	0
Rep Net Income	7,832	4,746	3,144	4,624	7,765	7,914	8,671

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	769.4	765.5	761.4	761.4	761.4	761.4	761.4
EPS	10.18	6.20	4.13	6.07	10.20	10.39	11.39
Adj EPS	10.18	6.20	4.13	6.07	10.20	10.39	11.39
Adj CEPS	23.47	20.12	17.24	14.75	19.44	21.32	22.94
DPS (net)	3.46	2.84	2.59	2.45	2.74	2.79	3.06
EPS/ADR	$10.18	$6.20	$4.13	$6.07	$10.20	$10.39	$11.39
Adj EPS/ADR	$10.18	$6.20	$4.13	$6.07	$10.20	$10.39	$11.39
Adj CEPS/ADR	$23.47	$20.12	$17.24	$14.75	$19.44	$21.32	$22.94
DPS (net)/ADR	$3.46	$2.84	$2.59	$2.45	$2.74	$2.79	$3.06
Pay out ratio (EPS)	33.9%	45.7%	62.6%	40.3%	26.9%	26.9%	26.9%
Pay out ratio (Adj CEPS)	14.7%	14.1%	15.0%	16.6%	14.1%	13.1%	13.3%
Tax rate	27%	30%	21%	20%	20%	20%	20%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	7,832	4,746	3,144	4,624	7,765	7,914	8,671
DD&A	5,756	8,816	8,796	6,805	9,036	9,345	9,955
Exploration	602	1,104	540	252	255	267	288
Minority adjustment	(205)	(32)	38	50	50	50	50
Other non-cash items	2,747	(1,887)	(311)	(662)	(714)	(781)	(864)
Working capital	(283)	2,821	918	162	(1,589)	(560)	(635)
Net cashflow from ops	16,449	15,568	13,124	11,231	14,803	16,235	17,466
Disposals	97	132	186	0	0	0	0
Shares Issued	0	0	0	0	0	0	0
Sources	16,546	15,700	13,310	11,231	14,803	16,235	17,466
Capex	(15,806)	(14,643)	(10,921)	(9,701)	(11,760)	(12,107)	(13,164)
Acquisitions	(2,786)	49	(12)	0	0	0	0
Dividends	(2,383)	(1,357)	(1,931)	(3,241)	(2,205)	(2,352)	(2,488)
Shares purchased	0	0	0	0	0	0	0
Other	(857)	(288)	64	0	0	0	0
Applications	(21,832)	(16,239)	(12,800)	(12,942)	(13,965)	(14,459)	(15,652)
Cash surplus/(deficit)	(5,286)	(539)	510	(1,711)	838	1,776	1,815
FX/other	(116)	(877)	31	(0)	0	0	0
Decrease in net debt	(5,402)	(1,416)	541	(1,711)	838	1,776	1,815

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	9,109	10,525	9,984	11,695	10,857	9,081	7,266
Equity	78,578	81,130	81,813	84,382	89,941	95,503	101,687
Capital employed	87,687	91,655	91,796	96,077	100,798	104,584	108,953
Net debt/Equity	12%	13%	12%	14%	12%	10%	7%
Net debt/Net debt & Equity	10%	11%	11%	12%	11%	9%	7%
NAV	114.0	119.7	120.6	126.2	132.4	137.4	143.1
ROAE	10%	6%	4%	6%	9%	9%	9%
ROACE	9%	6%	4%	5%	8%	8%	8%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	47,123	40,423	27,371	27,371	27,371	27,371	27,371
Core net debt (inc. associates)	6,408	9,817	10,254	10,839	11,276	9,969	8,174
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Less: Peripheral assets	0	0	0	0	0	0	0
EV	53,531	50,240	37,626	38,211	38,647	37,340	35,545
Net income before minorities	7,627	4,714	3,182	4,674	7,815	7,964	8,721
DDA + exploration	6,358	9,920	9,335	7,057	9,291	9,613	10,244
Other group non-cash items	2,464	934	607	(500)	(2,303)	(781)	(864)
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	182	252	282	231	331	329	256
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	16,631	15,820	13,406	11,462	15,134	17,125	18,357
EV/DACF	3.2x	3.2x	2.8x	3.3x	2.6x	2.2x	1.9x

Lundin Petroleum

Investment case

Lundin's asset base is high quality. Core projects (Edvard Grieg, Johan Sverdrup, et al) support a potential 30% 5-year production CAGR (2015-20E). We like its concentration of value in Norway, a stable and secure free market with attractive exploration fiscal incentives, in the context of an industry increasingly pushed to more hostile investment climates. Oil prices will likely remain volatile near term, but current production has competitive cash costs of ~$12/boe and Sverdrup is a growth asset of unique scale (2.3Bnbbl; >600kb/d), enviably positioned on the supply curve (IRR: 21%; full-cycle project 10% IRR breakeven: $37/bbl). Exploration in Norway is cost effective, with the 78% tax rebate, allowing it to pursue a busy drilling programme, including big wells in the Barents. Gearing is very high. Whilst we think sufficient funding is in place, there is little scope for delays or cost over-runs. Given lower oil prices, previously mooted buybacks, dividends and spinning out non-core (French) businesses are surely now on the back-burner. The assets are enviable but trading close to our commercial NAV buying the stock here offers little margin of error.

Financial and operational outlook

This year (2015) was set to be the transformational one for Lundin with four new fields on stream taking production to >75kboe/d. However, operationally it has been a disappointing time. Edvard Grieg start-up slipped to 'late December'; Brynhild FPSO issues and early water cuts saw us cut reserves by 40% to 12Mmbbl and FY15E production guidance was cut by 30% to 32kboe/d. Gearing is very high – we see 2015E net debt/EBITDA at 10.5x – and at our new oil price assumption, 2016E remains a year of negative free cash. Gearing (if not absolute net debt) should fall naturally with 2016E production more than doubling to 75kboe/d. Lundin's exploration focus is on emerging Loppa High in The Barents Sea, where it has made two promising discoveries to date – Alta and Gohta.

Upside scenario

Upside fair value: SKr180/sh

Key to realise the upside case will be successful delivery of key projects Edvard Grieg and Bertram with the market likely to de-risk valuations if they are delivered according to budget/schedule. Exploration success can drive value. Lundin's drilling programme tests >400Mmboe of net resource over the next year. Its focus is on the Utsira High and emerging plays in the Barents Sea. We carry the portfolio at SKr9-38/sh (risked-unrisked).

From a macro perspective a $10/bbl increase in our LT oil price forecast of $80/bbl (Brent) adds SKr19/sh to commercial NAV.

From a macro perspective a $10/bbl increase in our LT oil price forecast ($80/bbl Brent) adds £0.90/sh to our NAV

Downside scenario

Downside fair value: SKr80/sh

Key downside risks are budget/schedule overruns on key projects Edvard Grieg and Johan Sverdrup. All else equal a 1 year delay reduces project value by c.10%. Exploration disappointments could hurt NAV and sentiment. Dry holes could see SKr10/sh of downside.

From a macro perspective a $10/bbl decrease in our LT oil price forecast of $80/bbl (Brent) cuts SKr19/sh from commercial NAV.

Catalysts

Wells to watch & spud date

3Q15: Neiden (SKr2.12-7.07/sh) (Loppa High, Barents, Alta follow-on, 205Mmbbl).
4Q15: Fosen (SKr2.08-9.46/sh) (Utsira High, strat-trap, 192Mmbbl).
4Q15: Ornen (SKr2.45-12.24/sh) (Loppa High, Barents, Alta follow-on, 355Mmbbl).

Other
Oct': CEO change-over
4Q15: Edvard Grieg field start-up

Valuation

Our target price set at ~1.00x commercial NAV. Core: SKr90/sh; Commercial: SKr112/sh; RENAV: SKr121/sh. The European E&P sector average multiple is 0.71x. A busy drilling programme in 4Q15 (SKr35/sh of upside) and likely de-risking of Edvard Greig upon start-up (SKr7/sh) means we set our target at commercial NAV.

Lundin Petroleum — Price target: SEK 110 — Upside: 3% — Neutral

Share data				
Mkt cap (SEK bn)	33.3	% of OMX Stockholm 30		0.89%
Mkt cap ($ bn)	3.9	% of MSCI Energy		0.11%
Price (SEK)	107	% of MSCI Pan-Euro		0.03%
12m high	144	Daily trading volume (m)		1.83
12m low	95	Free float		66.6%
RIC code	LUPE.ST	Major shareholders	Lorito	24.5%
Bloomberg code	LUPE SS		Swedbank	5.8%
ADR Ratio	1		Blackrock	4.9%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	33	25	31	75	77	68	57
Growth	-8%	-24%	26%	138%	4%	-13%	-16%
Oil production (000 bbl/d)	26	19	26	68	71	64	54
Growth	-11%	-26%	35%	161%	6%	-10%	-15%
Gas production (000 mcf/d)	41	35	33	42	36	20	15
Growth	1%	-15%	-6%	27%	-15%	-44%	-23%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
SEK/$	**6.75**	**6.75**	**6.75**	**6.75**	**6.75**	**6.75**	**6.75**
E&P Revenues	**1,196**	**785**	**594**	**1,544**	**1,968**	**1,859**	**1,669**
Operating Costs	(152)	(63)	(164)	(263)	(270)	(255)	(242)
Admin, G&A	(44)	(52)	(48)	(48)	(48)	(48)	(48)
DD&A	(298)	(532)	(263)	(546)	(567)	(494)	(416)
Exploration expense	(288)	(386)	(326)	(180)	(180)	(180)	(180)
EBIT	**371**	**(252)**	**(210)**	**503**	**900**	**880**	**781**
Other financial	121	(410)	(190)	(2)	(2)	(2)	(2)
Net interest	(3)	(24)	(108)	(169)	(181)	(183)	(191)
Pre-tax profit	**489**	**(686)**	**(509)**	**332**	**717**	**695**	**588**
Tax	(215)	253	97	(166)	(502)	(486)	(412)
Minorities	5	5	4	4	4	4	4
Reported Net Income	**278**	**(429)**	**(408)**	**170**	**219**	**212**	**180**
Special items	(201)	798	192	0	0	0	0
Clean Net Income (UBS)	**78**	**370**	**(216)**	**170**	**219**	**212**	**180**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	318	313	309	309	309	309	309
EPS	0.88	-1.37	-1.32	0.55	0.71	0.69	0.58
Adj EPS	0.24	1.18	-0.70	0.55	0.71	0.69	0.58
Adj CEPS	4.99	3.92	1.23	3.98	5.33	5.03	4.45
DPS (net)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Adj EPS/ADR	0.24	1.18	-0.70	0.55	0.71	0.69	0.58
Adj CEPS/ADR	4.99	3.92	1.23	3.98	5.33	5.03	4.45
DPS (net)/ADR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pay out ratio (EPS)	0%	0%	0%	0%	0%	0%	0%
Pay out ratio (Adj CEPS)	0%	0%	0%	0%	0%	0%	0%
Tax rate	44%	37%	19%	50%	70%	70%	-1%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	274	(433)	(412)	166	215	208	176
DD&A	298	532	263	546	567	494	416
Exploration	288	386	326	180	180	180	180
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	(110)	47	313	(2)	272	159	57
Working capital/other	165	109	(85)	0	0	0	0
Net cashflow from ops	**914**	**641**	**404**	**890**	**1,234**	**1,041**	**829**
Disposals	0	0	0	0	0	0	0
Shares issued	(20)	(10)	0	0	0	0	0
Sources	**894**	**632**	**404**	**890**	**1,234**	**1,041**	**829**
Capex	(1,738)	(2,083)	(1,750)	(1,367)	(1,243)	(1,175)	(1,148)
Acquisitions	(4)	0	(4)	0	0	0	0
Dividends	0	0	0	0	0	0	0
Shares purchased	0	0	0	0	0	0	0
Other	(2)	21	(5)	0	0	0	0
Applications	**(1,744)**	**(2,062)**	**(1,758)**	**(1,367)**	**(1,243)**	**(1,175)**	**(1,148)**
Cash surplus/(deficit)	(850)	(1,431)	(1,354)	(477)	(9)	(134)	(319)
FX/other	(200)	3	2	0	0	0	0
Decrease in net debt	**(1,049)**	**(1,427)**	**(1,352)**	**(477)**	**(9)**	**(134)**	**(319)**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	1,182	2,610	3,961	4,438	4,447	4,581	4,901
Equity	1,267	466	59	229	448	661	841
Capital employed	2,449	3,075	4,020	4,667	4,896	5,242	5,742
Net debt/equity	93%	560%	6677%	1937%	992%	693%	583%
Net debt/Net debt & Equity	48%	85%	99%	95%	91%	87%	85%
NAV	7.7	9.8	13.0	15.1	15.8	17.0	18.6
ROAE	23.8%	-49.5%	-155.5%	117.7%	64.7%	38.3%	24.0%
ROACE	15.2%	-15.5%	-11.5%	3.9%	4.6%	4.2%	3.3%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	6,816	5,586	3,949	3,949	3,949	3,949	3,949
Core net debt (inc. associates)	1,182	2,610	3,961	4,438	4,447	4,581	4,901
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**7,998**	**8,195**	**7,910**	**8,387**	**8,396**	**8,530**	**8,849**
Net income before minorities	274	(433)	(412)	166	215	208	176
DD&A + exploration	585	919	589	726	747	674	596
Other group non-cash items	191	167	81	166	452	340	247
Core associates non-cash items	9	14	19	24	29	29	29
Core post-tax interest + pension cost	2	12	54	85	90	91	95
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**1,060**	**678**	**330**	**1,167**	**1,533**	**1,343**	**1,143**
EV/DACF	**7.5x**	**12.1x**	**23.9x**	**7.2x**	**5.5x**	**6.4x**	**7.7x**

Marathon Oil

Investment Case

Given our expectations for a steady rise in oil prices from current levels, we favor MRO's for its greater operating leverage to crude, above average cash flow per debt adjusted share growth, and inexpensive (relative to large cap E&Ps) valuation. Notably, we estimate MRO is trading at a discount to peers on both EV/DACF and P/NAV, despite its above average cash flow per debt-adjusted share growth outlook given concerns about its large FCF deficit. MRO also has a number of near-term catalysts to monitor across its three core US resource plays which could lead to share price appreciation. Our $21 price target assumes 5.5x normalized 2016E DACF and implies 0.6x 2P NAV.

Financial and Operational Outlook

MRO preliminarily expects its 2016 capital budget will be below this year's $3.3 billion level as it targets cash flow neutrality (including asset sales) and continues to manage its balance sheet by keeping net debt/EBITDX as close to 2.5x as possible. Meanwhile, MRO has some capital flexibility next year, given ~$150 million rolling off this year from an Equatorial Guinea compression project and Brae infill drilling in the North Sea as well as the loss of ~$125 million in one-time midstream expenditures this year. Thus, depending on oil prices, MRO could increase this year's ~$1.54 billion U.S. unconventional budget next year without boosting the overall companywide budget, or leave it flat with 2015 levels and lower its total capex spending. We forecast 2016 capex declines to $2.9 billion (in line with consensus), with production declining >1% YoY while MRO would need $1.2 billion in asset sales to be cash flow neutral post dividend and divestitures at current futures strip prices.

Upside Scenario

Our upside case assumes a sharper than expected rebound in near-term crude oil prices, narrowing MRO's free cash flow deficit (the primary concerns investors have for it), improving its relative balance sheet metrics vs. peers and enabling it to ramp-up spending and activity levels into 2016, supporting modest growth. In this scenario, we could see MRO appreciating to 6.5x normalized 2016E DACF, a full turn above its historical average but in line with the peer average target multiple and implying upside to $27/share.

Downside Scenario

Our downside case assumes a more sustained downturn in crude oil prices, exacerbating MRO's already wide free cash flow deficit and leaving it at risk of further levering-up its balance sheet and/or implementing additional capex cuts, which may pressure its longer-term growth outlook. A sustained period of lower oil prices may also put MRO's dividend at risk. In this scenario, we believe MRO's multiple could compress to 4.0x normalized 2016E DACF (>1.0x below its historical average), implying downside to $14/share.

Catalysts

2015: Exploration/appraisal results from GoM and Equatorial Guinea

2015-16: Upgrade to Eagle Ford resource estimate from 1.12 BBoe guidance provided in September 2014 given higher EURs and Austin Chalk upside; UBSe 1.7 BBoe of resource

2H15: Increase Bakken resource from 730 MMBoe based on enhanced well completion design and downspacing

2015: $500 million in non-core asset sales could reduce FCF deficit

Valuation

MRO trades at a discount to peers on EV/DACF and price/NAV despite a superior long-term debt-adjusted growth outlook. Our $21 price target is based on 5.5x normalized 2016E DACF (a full turn below its peers' average target multiple).

Marathon Oil — Price target: $21 — Upside: 28% — Buy

Share data			
Mkt cap ($ bn)	11.1	% of S&P 500	0.15%
Mkt cap ($ bn)	11.1	Daily trading volume (m)	1.87
Price ($)	16.4	Free float	100.0%
12m high	40.91	Major shareholders: Wellington Mgmt	6.0%
12m low	14.04	Vanguard Group	6.0%
RIC code	MRO.N	Ssga Funds Mgmt.	4.7%
Bloomberg code	MRO US		

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	490	434	432	427	435	464	489
Growth	2%	-12%	0%	-1%	2%	7%	5%
Oil production (000 bbl/d)	347	301	302	298	312	342	367
Growth	6%	-13%	0%	-1%	5%	10%	7%
Gas production (000 mcf/d)	859	796	783	776	737	732	729
Growth	-5%	-7%	-2%	-1%	-5%	-1%	0%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	97.99	93.01	48.98	52.51	65.00	70.00	75.00
US Natural Gas Price $/mcf	3.65	4.45	2.85	3.25	3.75	4.00	4.00
E&P Revenues	12,650	9,325	4,685	4,948	6,601	7,879	9,110
Other Revenues	467	507	468	535	472	485	485
Total Revenues	**13,117**	**9,831**	**5,153**	**5,483**	**7,074**	**8,364**	**9,594**
Costs	(3,714)	(3,919)	(3,386)	(3,066)	(3,186)	(3,408)	(3,614)
Admin, G&A	(31)	(32)	(29)	(29)	(29)	(30)	(32)
DD&A	(2,827)	(2,882)	(3,043)	(3,098)	(3,271)	(3,657)	(4,034)
Exploration expense	(654)	(796)	(463)	(459)	(466)	(495)	(519)
Adj Operating Income	**5,891**	**2,203**	**(1,768)**	**(1,169)**	**122**	**773**	**1,395**
Other income & Associates	(88)	(187)	(404)	(300)	(300)	(300)	(300)
Net interest	(274)	(241)	(241)	(241)	(241)	(241)	(241)
Pre-tax profit	**5,529**	**1,775**	**(2,413)**	**(1,710)**	**(419)**	**232**	**854**
Tax	(3,412)	(782)	375	294	(182)	(421)	(644)
Minorities	(85)	(68)	(52)	(79)	(54)	(59)	(59)
Other	(136)	330	834	277	251	248	258
Adj Net income	**1,897**	**1,255**	**(1,256)**	**(1,217)**	**(405)**	**0**	**409**
Special items	(5)	1,182	(269)	(20)	(5)	(12)	(12)
Rep Net income	**1,892**	**2,437**	**(1,525)**	**(1,237)**	**(410)**	**(12)**	**397**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	703	682	678	678	678	678	678
EPS	$2.69	$3.57	($2.25)	($1.82)	($0.60)	($0.02)	$0.59
Adj EPS	$2.70	$1.84	($1.85)	($1.80)	($0.60)	$0.00	$0.60
Adj CEPS	$8.39	$6.98	$2.55	$3.30	$5.00	$6.30	$7.90
DPS (net)	$0.72	$0.80	$0.84	$0.87	$0.91	$0.94	$0.98
Pay out ratio (EPS)	27%	43%	NA	NA	NA	NA	163%
Pay out ratio (Adj CEPS)	9%	11%	33%	27%	18%	15%	12%
Tax rate	62%	44%	16%	17%	-43%	181%	75%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	1,753	3,046	(1,510)	(1,217)	(405)	0	409
DD&A	2,790	2,861	3,063	3,098	3,271	3,657	4,034
Exploration	798	623	455	459	466	495	519
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	561	(1,767)	(277)	(105)	58	119	391
Working capital/other	(632)	(27)	(215)	0	0	0	0
Net cashflow from ops	**5,270**	**4,736**	**1,515**	**2,235**	**3,390**	**4,272**	**5,353**
Disposals	450	3,760	252	500	500	500	500
Shares issued	0	0	0	0	0	0	0
Sources	**5,720**	**8,496**	**1,767**	**2,735**	**3,890**	**4,772**	**5,853**
Capex	(4,766)	(5,181)	(3,604)	(2,663)	(3,068)	(4,000)	(4,605)
Acquisitions	(74)	0	0	0	0	0	0
Dividends	(508)	(543)	(567)	(590)	(613)	(638)	(663)
Shares purchased	(500)	(1,000)	0	0	0	0	0
Other	(45)	190	(902)	0	0	0	0
Applications	**(5,893)**	**(6,534)**	**(5,073)**	**(3,253)**	**(3,681)**	**(4,637)**	**(5,268)**
Cash surplus/(deficit)	(173)	2,337	(3,306)	(518)	209	135	585
FX/other	(129)	868	(65)	0	0	0	0
Decrease in net debt	**(302)**	**3,205**	**(3,370)**	**(518)**	**209**	**135**	**585**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	6,130	2,925	6,295	6,813	6,604	6,470	5,885
Equity	19,344	21,020	19,086	17,279	16,261	15,624	15,369
Capital employed	25,474	23,945	25,381	24,092	22,866	22,094	21,254
Net debt/equity	32%	14%	33%	39%	41%	41%	38%
Net debt/Net debt & Equity	24%	12%	25%	28%	29%	29%	28%
NAV	36.2	35.1	37.4	35.5	33.7	32.6	31.4
ROAE	9.8%	5.3%	-8.0%	-7.2%	-2.5%	-0.1%	2.6%
ROACE	7.9%	5.4%	-4.1%	-3.9%	-2.8%	0.4%	2.3%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	24,285	24,121	11,042	11,042	11,042	11,042	11,042
Core net debt (inc. associates)	7,792	6,431	5,949	7,048	7,203	7,031	6,671
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**32,077**	**30,551**	**16,992**	**18,090**	**18,245**	**18,073**	**17,713**
Net income before minorities	2,117	993	(2,038)	(1,416)	(601)	(189)	210
DD&A + exploration	3,480	3,678	3,506	3,557	3,736	4,152	4,554
Other group non-cash items	(447)	(123)	696	97	(235)	(386)	(97)
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	443	347	278	282	136	678	423
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**5,594**	**4,895**	**2,443**	**2,521**	**3,036**	**4,255**	**5,089**
EV/DACF	**5.7x**	**6.2x**	**7.0x**	**7.2x**	**6.0x**	**4.2x**	**3.5x**

MOL

Investment case

The ongoing dispute between MOL and Croatia over INA has been a key driver of the share price underperformance in the past 18 months. There is still no good solution in sight but the next parliamentary elections in Croatia (late 2015/early 2016) could accelerate negotiations. We view MOL as capable of withstanding the loss of INA but negative regulatory decisions could still hit the business. MOL is otherwise showing good progress operationally. The Upstream business has turned the corner and production is growing again. Management is still looking at M&A but sounds in less of a hurry than previously and the current period of lower prices could offer more interesting opportunities. In the Downstream, MOL has delivered on its initial $500m improvement programme and there is more to come with the recently announced second programme of $500m. But we do not see the shares breaking out of their trading range in the absence of a positive outcome to the INA dispute or a recovery in the oil price.

Financial and operational outlook

2Q 2015 gearing stood at 21%. We estimate that 2015 cash neutrality is achieved at $26/bbl. We see gearing peaking in 2015 at 19.8% and cash neutrality at $63/bbl in 2017. ROACE peaked in 2011 at 9.2% and we estimate will be 8.9% in 2015 before climbing to 9.1% in 2018. We expect capex to increase from HUF350bn in 2013 to HUF430bn in 2015 as MOL ramps up investments in the Upstream. This is reflected in the 5-year production growth (2014-2019) of 6.7% driven by the UK and Kurdistan.

Upside scenario

Under our upside scenario, MOL manages to maintain control of INA in exchange for limited investment commitments in the company. This would lead us to apply a multiple closer to the sector average and the company's 3-year average, at 4.8x EV/DACF. In the upstream, if MOL was able to slow the decline of its core CEE production, keeping Croatia stable and Hungary declining at 3%. It would add HUF6bn to our DACF (1.3%). On that basis, our valuation would move to HUF18,500/share.

Downside scenario

Under our downside scenario, MOL would be forced to sell its stake in INA, at a discount of 50% to our NAV of HUF4,219/share. In the upstream, we could see decline rates in core CEE production worsen to 10%/year which would cut earnings by ~2%. There is also a risk of overpaying for assets in the upstream. In the downstream, structurally weaker refining margins (European composite margin at ~$1.5/bbl) could reduce EBITDA by ~HUF15bn. On that basis, our valuation would move to HUF11,000/share.

Catalysts

September 2015	Start of regular payments to IOCs from the KRG
Mid-September 2015	Results of Akri-Bijeel Competent Person's Report
6 November 2015	3Q15 results
Early 2016	Croatian general elections
Ongoing	Upstream and Downstream (Retail) M&A
Ongoing	Negotiations with Croatia over ownership of INA

Valuation

Our price target is set at 4.2x 2017E EV/DACF vs. sector at 5.4x and MOL's 3-yr avg of 4.7x. This equates to a P/E of 7.6x and dividend yield of 4.5% (10-year average multiples of 8.9x and 3.5%, respectively). We remain Neutral on MOL but more visibility on a solution to the INA situation in the next few months could make us more positive.

MOL Price target: HUF15,000 Upside: 10% Neutral

Share data				
Mkt cap (HUF bn)	1358.2	% of Budapest Stock Exchange		26.95%
Mkt cap ($ bn)	4.8	% of CECE Composite		1.49%
Price (HUF)	13650	% of DJ Emerging Oil and Gas Titans		1.71%
12m high	15360	Daily trading volume		0.11
12m low	10710	Free float		32%
RIC code (ADR)	MOLB.BU	Major shareholders	Hungarian gov't	24.7%
Bloomberg code	MOL HB		CEZ	7.4%
ADR ratio	1		Oman Oil	7.0%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	104	98	105	110	115	129	135
Growth	-13%	-6%	8%	5%	4%	13%	4%
Ref thru'puts (000 b/d)	410	351	372	368	368	372	376
Growth	2%	-14%	6%	-1%	0%	1%	1%
Product sales (000 b/d)	70	71	76	76	77	78	78
Growth	3%	2%	7%	1%	1%	1%	0%

Profit & Loss (HUFm)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
HUF/$	**223**	**233**	**276**	**275**	**275**	**275**	**275**
R&M	25,600	93,658	314,153	282,241	254,349	238,649	220,084
Gas and power	37,073	23,411	37,908	38,306	36,071	37,189	36,630
E&P	184,949	110,770	13,870	(18,344)	58,924	152,180	198,376
Other	(69,482)	(19,413)	(44,436)	(43,544)	(43,544)	(43,544)	(43,544)
Adj Operating Income	**178,140**	**208,426**	**321,494**	**258,659**	**305,800**	**384,474**	**411,546**
Associates	19,984	18,842	17,038	20,000	20,000	20,000	20,000
Net interest	(59,806)	(103,636)	(92,427)	(48,473)	(50,841)	(52,384)	(49,563)
Special items	(182,795)	(167,497)	200	0	0	0	0
Pretax profit	**(44,478)**	**(43,865)**	**246,305**	**230,186**	**274,959**	**352,090**	**381,983**
Tax	37,334	(5,809)	(76,400)	(54,648)	(66,289)	(86,343)	(108,595)
Minorities	34,310	54,576	(2,218)	(19,748)	(23,475)	(29,896)	(30,756)
Reported net income	**27,166**	**4,902**	**167,688**	**155,790**	**185,194**	**235,850**	**242,632**
Special items	101,650	141,138	49,617	0	0	(0)	(0)
Adj net income	**128,817**	**146,040**	**217,305**	**155,790**	**185,194**	**235,850**	**242,632**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	100	99	99	99	99	99	99
EPS	273	49	1,691	1,571	1,867	2,378	2,446
Adj HUFPS	1,294	1,471	2,191	1,571	1,867	2,378	2,446
Adj CEPS	5,574	3,755	4,900	4,954	5,368	6,294	6,476
DPS (net)	588	492	500	500	650	750	750
EPS/ADR	$1.22	$0.21	$6.12	$5.71	$6.79	$8.65	$8.90
Adj HUFPS/ADR	$5.79	$6.32	$7.93	$5.71	$6.79	$8.65	$8.90
Adj CEPS/ADR	$24.95	$16.14	$17.73	$18.02	$19.52	$22.89	$23.55
DPS (net)/ADR	$2.63	$2.11	$1.81	$1.82	$2.36	$2.73	$2.73
Pay out ratio (EPS)	45%	33%	23%	32%	35%	32%	31%
Pay out ratio (Adj CEPS)	11%	13%	10%	10%	12%	12%	12%
Tax rate	84%	-13%	31%	24%	24%	25%	28%

Cash Flow (HUFm)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	27,166	4,902	167,688	155,790	185,194	235,850	242,632
DD&A (inc. HUFxploration)	527,693	368,184	318,245	335,538	347,169	388,392	399,622
Minority adjustment	(34,310)	(54,576)	2,218	19,748	23,475	29,896	30,756
Working capital	168,130	41,949	(137,575)	(24,669)	(57,048)	(57,095)	(10,429)
Other non-cash items	(93,013)	25,038	49,662	(10,000)	(10,000)	(10,000)	(10,000)
Net cashflow from ops	**595,666**	**385,497**	**400,238**	**476,407**	**488,791**	**587,043**	**652,582**
Disposals	61,183	55,554	4,440	0	0	0	0
Shares	0	0	0	0	0	0	0
Sources	**656,849**	**441,051**	**404,678**	**476,407**	**488,791**	**587,043**	**652,582**
Capex	(250,297)	(339,145)	(359,343)	(412,500)	(453,750)	(481,250)	(495,000)
Acquisitions	(10,110)	(132,747)	(27,143)	0	0	0	0
Dividends	(58,004)	(61,625)	(64,690)	(74,936)	(74,936)	(90,242)	(100,445)
Share buybacks	0	0	0	0	0	0	0
Other	34,946	(146,736)	33,629	0	0	0	0
Applications	**(283,465)**	**(680,253)**	**(417,547)**	**(487,436)**	**(528,686)**	**(571,492)**	**(595,445)**
Cash surplus/(deficit)	373,384	(239,202)	(12,869)	(11,030)	(39,895)	15,552	57,137
FX/other	(42,192)	113,692	(38,452)	0	(0)	(0)	(0)
Decrease in net debt	**331,192**	**(125,510)**	**(51,321)**	**(11,030)**	**(39,895)**	**15,552**	**57,137**

Balance Sheet (HUFm)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	411,001	536,511	587,832	598,861	638,757	623,205	566,068
Equity	2,160,992	2,195,126	2,386,592	2,487,193	2,620,926	2,796,431	2,969,374
Capital Employed	2,571,993	2,731,637	2,974,424	3,086,054	3,259,683	3,419,636	3,535,442
Net debt/Equity	19%	24%	25%	24%	24%	22%	19%
Net debt/Net debt & Equity	16%	20%	20%	19%	20%	18%	16%
NAV	21,711.2	22,093.9	24,064.4	25,078.7	26,427.2	28,196.8	29,940.6
ROAE	6.3%	6.0%	10.7%	8.5%	9.4%	10.9%	10.4%
ROACE	4.9%	4.9%	8.9%	7.0%	7.8%	9.1%	8.9%

EV Valuation (HUFm)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	1,531,413	1,221,996	1,358,175	1,358,175	1,358,175	1,358,175	1,358,175
Core net debt (inc. associates)	635,313	553,905	660,864	657,280	709,501	719,405	662,567
Buy-out of minorities	100	100	22,180	197,480	234,753	298,965	307,562
Pension provisions	17,664	23,184	23,184	23,184	23,184	23,184	23,184
Peripheral assets	0	0	0	0	0	0	0
EV	**2,184,489**	**1,799,184**	**2,064,403**	**2,236,119**	**2,325,614**	**2,399,729**	**2,351,488**
Net income before minorities	(7,144)	(49,674)	169,906	175,538	208,670	265,746	273,388
DD&A + Exploration	527,693	368,184	318,245	335,538	347,169	388,392	399,622
Other group non-cash items	(93,013)	25,038	49,662	(10,000)	(10,000)	(10,000)	(10,000)
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	42,207	39,316	35,438	35,870	37,622	38,765	36,677
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**469,743**	**382,864**	**573,250**	**536,945**	**583,460**	**682,902**	**699,686**
EV/DACF	**4.7x**	**4.7x**	**3.6x**	**4.2x**	**4.0x**	**3.5x**	**3.4x**
EV/DACF $	**4.6x**	**4.7x**	**3.5x**	**4.1x**	**3.9x**	**3.4x**	**3.3x**

Murphy Oil

Investment Case

We believe the sharp 2015 capex cut coupled with MUR's high capital intensity asset base will lead to production continuing to decline into 2016. And despite materially lower capex, we estimate MUR still outspends cash flow by ~$1 billion per annum in 2015-16. Given a deteriorating production profile and balance sheet, we forecast its cash flow per debt-adjusted share growth to be well below peers over the 2015-19 time period, and believe MUR's disappointing production outlook, large free cash flow deficit and below average unbooked resource inventory warrants a discount valuation multiple relative to peers. However, MUR trades at a material premium to peers on P/NAV under the UBS price deck and in line with its historical average discount to peers on EV/DACF. Thus, we rate MUR a Neutral with a $30 price target.

Financial and Operational Outlook

MUR's Eagle Ford volumes should continue to see sequential declines in 2H15 as it curbs activity in the play in response to low oil prices while it completed ~58% of its 2015 Eagle Ford well completions by mid-year. Importantly, MUR's 2H15 production guidance implies its volumes from the play should exit 2015 at ~55 MBoed (vs. 64.2 MBoed in 1Q15). This is a material reversal for an asset that was expected to drive the bulk of MUR's companywide volume growth over the next few years. And given expectations for capex to be lower next year, we forecast MUR's budget declines from $2.3 this year to $2.0 billion in 2016 (consensus is $2.1 billion), generating a $1 billion free cash flow deficit at the current futures strip and a 6% YoY decline in production.

Upside Scenario

Our upside case assumes MUR posts better than expected volumes in 2015-16 and achieves successful results from its exploration program sufficient to address investor concerns about the size of its unbooked resource inventory. Under this scenario, we could see MUR appreciating to NAV, or $33 which implies 4x normalized DACF.

Downside Scenario

Our downside case assumes MUR falls short of reaching its near-term production targets and continues to deliver disappointing exploration results, putting its already lackluster long-term growth profile at risk and increasing the possibility that it will need to pursue an acquisition to support its longer-term growth profile. In this case, we see MUR's shares de-rating as a multiple of its NAV to 0.7x, or $23/share.

Catalysts

2015: exploration/appraisal results from multiple prospects in deepwater Gulf of Mexico, Malaysia, and Brunei.

Valuation

MUR appears fully valued vs. peers on P/NAV. Our $30 price target assumes 0.9x NAV and implies 3.6x normalized 2016E DACF.

Murphy Oil — Price target: $30 — Upside: 5% — Neutral

Share data				
Mkt cap ($ bn)	4.9	% of S&P 500		0.06%
Mkt cap ($ bn)	4.9	Daily trading volume (m)		0.64
Price ($)	28.6	Free float		77.1%
12m high	59.94	Major shareholders	Vanguard Group	8.6%
12m low	26.90		Southeastern AM	8.4%
RIC code	MUR.N		Hotchkis & Wiley	5.8%
Bloomberg code	MUR US			

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	207	224	204	191	192	193	194
Growth	6%	9%	-9%	-6%	1%	1%	1%
Oil production (000 bbl/d)	136	150	134	124	125	126	127
Growth	20%	10%	-10%	-7%	1%	1%	1%
Gas production (000 mcf/d)	424	446	414	398	398	399	399
Growth	-14%	5%	-7%	-4%	0%	0%	0%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	97.99	93.01	48.98	52.51	65.00	70.00	75.00
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	5,313	5,279	2,607	2,569	3,082	3,313	3,552
Other Revenues	0	0	0	0	0	0	0
Total Revenues	**5,313**	**5,279**	**2,607**	**2,569**	**3,082**	**3,313**	**3,552**
Costs	(1,321)	(1,272)	(1,113)	(998)	(1,001)	(1,006)	(1,012)
Admin, G&A	(171)	(212)	(179)	(176)	(177)	(178)	(179)
DD&A	(1,544)	(1,898)	(1,692)	(1,574)	(1,579)	(1,588)	(1,598)
Exploration expense	(502)	(455)	(434)	(296)	(398)	(500)	(603)
Adj Operating Income	**1,775**	**1,442**	**(812)**	**(476)**	**(73)**	**40**	**160**
Other income & Associates	(100)	(209)	(186)	(162)	(166)	(169)	(176)
Net interest	(72)	(116)	(119)	(125)	(125)	(125)	(125)
Pre-tax profit	**1,676**	**1,233**	**(998)**	**(638)**	**(239)**	**(129)**	**(141)**
Tax	(790)	(621)	209	112	(52)	(119)	(64)
Minorities	0	0	0	0	0	0	0
Adj Net income	**886**	**611**	**(789)**	**(526)**	**(290)**	**(247)**	**(205)**
Special items	0	0	0	0	0	0	0
Rep Net income	**886**	**611**	**(789)**	**(526)**	**(290)**	**(247)**	**(205)**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	189	180	175	175	176	177	178
EPS	$4.68	$3.40	($4.50)	($3.00)	($1.65)	($1.40)	($1.15)
Adj EPS	$4.68	$3.40	($4.50)	($3.00)	($1.65)	($1.40)	($1.15)
Adj CEPS	$16.85	$17.63	$6.30	$7.90	$10.30	$11.20	$11.50
DPS (net)	$1.25	$1.32	$1.41	$1.48	$1.48	$1.54	$1.61
Pay out ratio (EPS)	27%	39%	NA	NA	NA	NA	NA
Pay out ratio (Adj CEPS)	7%	8%	22%	19%	14%	14%	14%
Tax rate	49%	51%	15%	17%	-26%	-104%	-1216%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	1,123	906	(596)	(526)	(290)	(247)	(205)
DD&A	1,589	1,906	1,696	1,689	1,694	1,703	1,598
Exploration	263	270	340	296	398	500	603
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	164	(69)	(390)	(58)	33	52	71
Working capital/other	500	(4)	107	0	0	0	0
Net cashflow from ops	**3,638**	**3,009**	**1,157**	**1,401**	**1,835**	**2,009**	**2,067**
Disposals	284	1,467	423	0	0	0	0
Shares issued	3	0	0	0	0	0	0
Sources	**3,926**	**4,476**	**1,580**	**1,401**	**1,835**	**2,009**	**2,067**
Capex	(3,615)	(3,679)	(2,591)	(2,052)	(2,052)	(2,052)	(2,052)
Acquisitions	0	0	(3)	(3)	(3)	(3)	(3)
Dividends	(235)	(236)	(246)	(258)	(258)	(271)	(284)
Shares purchased	(500)	(375)	(250)	0	0	0	0
Other	1,260	717	610	0	0	0	0
Applications	**(3,090)**	**(3,574)**	**(2,479)**	**(2,314)**	**(2,314)**	**(2,326)**	**(2,340)**
Cash surplus/(deficit)	836	902	(899)	(912)	(479)	(318)	(273)
FX/other	(1,942)	(655)	(108)	(0)	(0)	(0)	(0)
Decrease in net debt	**(1,106)**	**247**	**(1,007)**	**(912)**	**(479)**	**(318)**	**(273)**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	2,652	2,405	3,412	4,324	4,803	5,121	5,394
Equity	8,596	8,573	7,238	6,454	5,906	5,388	4,899
Capital employed	11,248	10,978	10,650	10,778	10,709	10,509	10,293
Net debt/equity	31%	28%	47%	67%	81%	95%	110%
Net debt/Net debt & Equity	24%	22%	32%	40%	45%	49%	52%
NAV	59.5	61.0	60.7	61.5	60.8	59.3	57.7
ROAE	10.1%	7.1%	-10.0%	-7.7%	-4.7%	-4.4%	-4.0%
ROACE	8.4%	6.4%	-6.0%	-3.5%	-1.4%	-1.1%	-0.7%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	10,751	10,536	4,999	4,976	5,383	5,383	5,383
Core net debt (inc. associates)	2,099	2,528	2,908	3,868	4,564	4,962	5,258
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**12,850**	**13,064**	**7,908**	**8,844**	**9,946**	**10,345**	**10,640**
Net income before minorities	886	611	(789)	(526)	(290)	(247)	(205)
DD&A + exploration	2,161	2,468	2,126	1,985	2,092	2,204	2,201
Other group non-cash items	74	(17)	(271)	(124)	135	(211)	28
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	107	175	137	146	93	(5)	(1,394)
less: peripheral income/cash	0	0	0	0	0	0	0
DACF	**3,228**	**3,237**	**1,203**	**1,481**	**2,029**	**1,741**	**629**
EV/DACF	**4.0x**	**4.0x**	**6.6x**	**6.0x**	**4.9x**	**5.9x**	**16.9x**

Noble Energy

Investment Case

We favor NBL as it offers: 1) a visible backlog of projects to fuel above average long-term debt-adjusted growth; 2) a lower than average cost structure relative to E&P peers; 3) a broad, diversified portfolio that spreads risk across geographic regions and commodity prices; and 4) a proven exploration track record with material upside across three separate offshore basins over the next few years. NBL also appears relatively well positioned for a lower oil price environment given its manageable 2015-16E free cash flow deficit, strong balance sheet and robust liquidity position. Nonetheless, NBL trades close to peers on EV/DACF and a discount on P/NAV; our $36 price target assumes ~8.5x normalized 2016E DACF, or ~0.80x NAV.

Financial and Operational Outlook

NBL has inferred that 2016 capex should be roughly in line with its annualized 4Q15 spending run rate which would enable it to deliver low-to-mid single digit production growth off a 2015E pro forma production base of 375 MBoed (adjusted for the ROSE acquisition). As spending should continue ramping down in 2H15 to ~$625 million in 4Q15 (including incremental capex on its newly acquired Eagle Ford/Permian Basin assets), we estimate a 2016 capex budget of ~$2.5 billion (well below consensus of ~$2.9 billion) which would enable a ~4% YoY pro forma growth to 390 MBoed and prompt a manageable free cash flow deficit of ~$700 million at current futures strip prices, likely to be funded by asset sales.

Upside Scenario

Our upside scenario assumes NBL exceeds its near-term production targets and outperforms operational expectations, particularly in its Niobrara development where we see significant upside to the company's conservative 2.6 BBoe resource estimate. It also assumes a gas framework agreement in Israel is reached soon under terms outlined this summer. Under these assumptions, we could see NBL appreciating to 0.9x NAV, or ~$40/share.

Downside Scenario

Our downside scenario assumes NBL fails to meet its near-term volume targets, widening its free cash flow deficit and negatively impacting its debt-adjusted production and cash flow metrics relative to peers. It also assumes the regulatory uncertainty in Israel causes the Leviathan development to be postponed indefinitely, removing $8/share of NAV. Under this scenario, we see NBL's valuation contracting to 0.7x reduced NAV implying downside to ~$25/share.

Catalysts

3Q15: exploration results from the Humpback prospect (35% w.i., 250 MMBoe) in the Falkland Islands and the Cheetah prospect (47% w.i., 100 MMBoe) offshore Cameroon

4Q15: spuds the Rhea prospect (75% w.i., 250 MMBoe) in the Falklands

2015: potential final approval of the Israeli gas framework agreement

2015: additional downspacing results from the DJ Basin, with potential upside to its current 2.6 BBoe resource estimate

Late 2015: start-up of Big Bend and Dantzler developments in the deepwater GoM

Valuation

NBL is trading below peers on price/NAV despite a higher growth outlook. Our $36 price target assumes 8.5x normalized 2016E DACF, or ~0.80x NAV.

Noble Energy — Price target: $36 — Upside: 17% — Buy

Share data			
Mkt cap ($ bn)	13.2	% of S&P 500	0.15%
Mkt cap ($ bn)	13.2	Daily trading volume (m)	1.26
Price ($)	30.7	Free float	92.0%
12m high	71.66	Major shareholders: Capital Research	10.9%
12m low	30.21	Fidelity M&R	8.3%
RIC code	NBL.N	Vanguard Group	6.0%
Bloomberg code	NBL US		

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	273	298	343	394	427	490	578
Growth	13%	9%	15%	15%	8%	15%	18%
Oil production (000 bbl/d)	123	133	151	179	200	242	290
Growth	10%	8%	14%	18%	12%	21%	20%
Gas production (000 mcf/d)	901	992	1149	1290	1361	1492	1725
Growth	16%	10%	16%	12%	5%	10%	16%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**97.99**	**93.01**	**48.98**	**52.51**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	5,013	5,132	4,132	4,295	5,277	6,277	7,596
Other Revenues	0	0	0	0	0	0	0
Total Revenues	**5,013**	**5,132**	**4,132**	**4,295**	**5,277**	**6,277**	**7,596**
Costs	(907)	(965)	(1,029)	(1,175)	(1,293)	(1,427)	(1,624)
Admin, G&A	(434)	(503)	(454)	(502)	(514)	(483)	(481)
DD&A	(1,568)	(1,760)	(1,998)	(2,302)	(2,490)	(2,859)	(3,369)
Exploration expense	(415)	(497)	(361)	(372)	(374)	(387)	(405)
Adj Operating Income	**1,689**	**1,407**	**290**	**(55)**	**606**	**1,121**	**1,718**
Other income & Associates	0	0	0	0	0	0	0
Net interest	(158)	(210)	(281)	(340)	(340)	(340)	(340)
Pre-tax profit	**1,531**	**1,197**	**9**	**(395)**	**266**	**781**	**1,378**
Tax	(480)	(309)	70	221	(72)	(238)	(400)
Minorities	0	0	0	0	0	0	0
Adj Net income	**1,051**	**888**	**78**	**(174)**	**194**	**543**	**978**
Special items	0	0	0	0	0	0	0
Rep Net income	**1,051**	**888**	**78**	**(174)**	**194**	**543**	**978**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	363	366	401	435	435	436	436
EPS	$2.90	$2.43	$0.20	($0.40)	$0.45	$1.25	$2.25
Adj EPS	$2.90	$2.43	$0.20	($0.40)	$0.45	$1.25	$2.25
Adj CEPS	$8.90	$8.59	$5.45	$5.15	$6.75	$8.60	$11.00
DPS (net)	$0.55	$0.69	$0.72	$0.75	$0.84	$0.94	$1.05
Pay out ratio (EPS)	19%	28%	370%	-187%	187%	75%	47%
Pay out ratio (Adj CEPS)	6%	8%	13%	14%	12%	11%	10%
Tax rate	31%	26%	-812%	56%	27%	31%	29%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	978	1,214	(164)	(174)	194	543	978
DD&A	1,570	1,759	1,998	2,302	2,490	2,859	3,369
Exploration	149	226	274	372	374	387	405
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	531	(105)	126	(111)	36	119	200
Working capital/other	(291)	412	34	0	0	0	0
Net cashflow from ops	**2,937**	**3,506**	**2,269**	**2,389**	**3,094**	**3,907**	**4,952**
Disposals	327	321	151	0	0	0	0
Shares issued	51	48	2,665	2	2	2	2
Sources	**3,315**	**3,875**	**5,085**	**2,391**	**3,096**	**3,909**	**4,954**
Capex	(3,947)	(4,871)	(3,323)	(2,500)	(3,950)	(5,000)	(6,550)
Acquisitions	0	0	(3,317)	0	0	0	0
Dividends	(198)	(249)	(288)	(322)	(361)	(404)	(453)
Shares purchased	(14)	(16)	(12)	0	0	0	0
Other	(83)	49	(61)	0	0	0	0
Applications	**(4,242)**	**(5,087)**	**(7,001)**	**(2,822)**	**(4,311)**	**(5,404)**	**(7,003)**
Cash surplus/(deficit)	(927)	(1,212)	(1,916)	(431)	(1,215)	(1,495)	(2,049)
FX/other	127	(41)	(210)	0	0	0	0
Decrease in net debt	**(800)**	**(1,253)**	**(2,126)**	**(431)**	**(1,215)**	**(1,495)**	**(2,049)**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	4,297	5,550	7,676	8,107	9,322	10,818	12,867
Equity	9,184	10,325	12,575	12,081	11,916	12,056	12,584
Capital employed	13,481	15,875	20,251	20,188	21,238	22,874	25,450
Net debt/equity	47%	54%	61%	67%	78%	90%	102%
Net debt/Net debt & Equity	32%	35%	38%	40%	44%	47%	51%
NAV	37.1	43.4	50.5	46.4	48.8	52.5	58.4
ROAE	12.1%	9.1%	0.7%	-1.4%	1.6%	4.5%	7.9%
ROACE	9.0%	6.9%	14.2%	-0.1%	2.1%	3.4%	4.8%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	22,300	23,979	12,231	13,278	13,285	13,291	11,238
Core net debt (inc. associates)	3,897	4,924	6,613	7,891	8,715	10,070	11,842
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**26,197**	**28,903**	**18,843**	**21,170**	**21,999**	**23,361**	**23,080**
Net income before minorities	1,051	888	78	(174)	194	543	978
DD&A + exploration	1,983	2,257	2,359	2,674	2,864	3,245	3,774
Other group non-cash items	197	(35)	(260)	(261)	(114)	(31)	50
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	275	329	5,226	282	467	445	454
less: peripheral income/cash	0	36	8	0	(5)	(10)	(10)
DACF	**3,506**	**3,475**	**7,412**	**2,521**	**3,406**	**4,192**	**5,246**
EV/DACF	**7.5x**	**8.3x**	**2.5x**	**8.4x**	**6.5x**	**5.6x**	**4.4x**

Novatek

Investment case

We believe Novatek's business profile is changing. In our view, Novatek is evolving from the biggest independent gas producer in Russia into a LNG player of genuine global standing. We expect strong total production growth, and superior FCF and earnings growth. While there are significant challenges, we believe the Yamal LNG project will ultimately be successful, given Novatek's excellent track record of completing capital-intensive projects on time and within budget. We think that comparing Novatek with domestic oil and gas producers is misleading, and that Novatek should be valued relative to international companies with growing production. In our view, there is no peer for Novatek in terms of production and FCF growth, and profitability. Therefore, we believe high financial multiples are justified.

Financial and operational outlook

We estimate that 2015 cash neutrality is achieved at just $4/bbl. That low level is explained by expected capex reduction and no new shareholder loans to Yamal LNG (as we forecast external project financing by the year-end). We acknowledge that the era of aggressive production growth is over for Novatek's subsidiaries. But while Novatek's subsidiaries' gas and gas condensate fields are producing at full capacity, production is growing fast from joint ventures. We believe the market is assigning little value to Novatek's joint ventures and the company's Yamal LNG project in particular, given oil price volatility.

Upside scenario

$1/bbl higher oil price generates 2% EPS upside. Our upside scenario includes completion of sale of a 9.9% stake in Yamal LNG to China Silk Road Fund, the earlier production ramp-up of the SeverEnergia fields and the launch of the Yarudeyskoye oil field. While sceptics hesitate over the company's ability to complete Yamal LNG on time and within the budget, Novatek is considering a second LNG project, aka Arctic LNG. We think Arctic LNG's NAV may be comparable to Yamal LNG's (NAV to Novatek is $14/GDR at $80/bbl long-term oil prce), given comparable reserves, cost structure and taxation breaks. We assign no value to Arctic LNG at this stage. Our upside scenario fair value is $130/GDR.

Downside scenario

The key risk to our positive view on the stock is lower production growth, further RUB devaluation relative to USD and a delay in Yamal LNG. We expect strong production growth, and exceptionally high FCF and earnings growth. Given its valuation, a failure to deliver high growth rates will be taken negatively by the market, we think. Despite Novatek's business profile changing in favour of the more profitable exports of oil, oil products and LNG, the company's earnings are still negatively exposed to a weaker ruble, given its high share of domestic gas sales. While historically $100 has been a support level for the stock, we believe the stock price could drop to $85 if the oil price collapses and the ruble depreciates relative to the USD.

Catalysts

We think key driving factors for the stock in the near term will likely be: (1) updates on the completion status of the Yamal LNG project; (2) additional LNG supply contracts; and (3) ongoing improvements in FCF generation. According to Novatek CEO, Yamal LNG may get $20bn of project financing and secure contracts for 100% of its future production by mid-2015. We believe completion of sale of a 9.9% stake in Yamal LNG to Chinese Silk Road Fund may be also a catalyst. In the press release on the conclusion of the long-term LNG supply contract with Shell, Novatek's CEO said the company plans to further develop co-operation with Shell in the LNG sector. We believe this statement does not rule out potential co-operation with Shell in Arctic LNG development. We note that Shell is the second biggest LNG producer in terms of equity LNG liquefaction capacity.

Valuation

Our price target of $105 (cut from $125) is 50/50 based on DCF (WACC=14% and zero terminal growth rate) and 12-month target EV/EBITDA of 8.0x. We rate Novatek a Buy.

Novatek — Price target: $105 — Upside: 14% — Buy

Share data				
Mkt cap ($ bn)	28.2	% of MSCI Russia		6.45%
Mkt cap ($ bn)	28.2	% of MSCI Energy		0.34%
Price ($)	92.0	% of MSCI World		0.03%
12m high	110.0	Daily trading volume (m)		0.32
12m low	66.5	Free float		22.6%
RIC code (ADR)	NVTKq.L	Major shareholders	Leonid Mikhelson	24.76%
Bloomberg code	NVTK LI		Volga Resources	23.49%
ADR ratio	10		TOTAL	18.64%
			Gazprom	9.99%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	1194	1237	1407	1543	1577	1678	1757
Growth	9%	4%	14%	10%	2%	6%	5%
Oil production (000 b/d)	89	124	181	260	257	254	253
Growth	3%	39%	46%	43%	-1%	-1%	0%
Gas production (000 mcf/d)	5920	6009	6619	6926	7127	7689	8119
Growth	9%	1%	10%	5%	3%	8%	6%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	109.65	99.25	55.00	57.50	70.00	75.00	80.00
Rb/$	31.84	38.41	60.08	62.50	57.50	52.50	50.00
Adj Operating Income	4,498	3,424	2,409	3,613	4,502	4,818	5,065
Net interest	(95)	(21)	97	130	258	457	685
Other financial	(4)	(657)	417	442	382	1,411	2,408
Special items	(118)	(1,032)	(110)	0	0	0	0
Pretax profit	4,281	1,715	2,813	4,186	5,142	6,686	8,157
Tax	(849)	(460)	(481)	(837)	(1,028)	(1,337)	(1,631)
Minorities	(2)	(9)	(38)	(293)	(400)	(435)	(471)
Other	4	19	35	0	0	0	0
Rep Net Income	3,434	1,264	2,330	3,055	3,713	4,914	6,055
Adj Net Income	3,434	1,264	2,330	3,055	3,713	4,914	6,055

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	303	302	302	302	302	302	302
EPS	11.33	4.17	7.71	10.11	12.29	16.26	20.04
Adj EPS	11.33	4.17	7.71	10.11	12.29	16.26	20.04
Adj CEPS	9.19	9.37	8.31	10.34	12.55	12.77	12.72
DPS (net)	2.46	2.56	2.31	3.03	3.69	4.88	6.01
EPS/ADR	11.33	4.17	7.71	10.11	12.29	16.26	20.04
Adj EPS/ADR	11.33	4.17	7.71	10.11	12.29	16.26	20.04
Adj CEPS/ADR	9.19	9.37	8.31	10.34	12.55	12.77	12.72
DPS (net)/ADR	2.46	2.56	2.31	3.03	3.69	4.88	6.01
Pay out ratio (EPS)	22%	61%	30%	30%	30%	30%	30%
Pay out ratio (Adj CEPS)	27%	27%	28%	29%	29%	38%	47%
Tax rate	20%	27%	17%	20%	20%	20%	20%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	3,434	1,264	2,330	3,055	3,713	4,914	6,055
DD&A	424	452	346	389	411	432	454
Exploration	14	3	1	1	1	1	1
Miority adjustment	(2)	(9)	(38)	(293)	(400)	(435)	(471)
Other non-cash items	(493)	1,152	(398)	(573)	(640)	(1,869)	(3,093)
Working capital	(597)	(51)	195	(41)	(91)	(54)	(42)
Net cashflow from ops	2,784	2,830	2,512	3,125	3,794	3,860	3,846
Disposals	50	1,530	0	0	0	0	0
Shares Issued	0	0	0	0	0	0	0
Sources	2,833	4,360	2,512	3,125	3,794	3,860	3,846
Capex	(1,604)	(1,465)	(782)	(432)	(429)	(430)	(442)
Acquisitions	(18)	(40)	0	0	0	0	0
Dividends	(687)	(712)	(686)	(769)	(1,015)	(1,294)	(1,645)
Other	(1,575)	(1,149)	(361)	248	585	585	1,454
Applications	(3,884)	(3,367)	(1,830)	(954)	(860)	(1,140)	(633)
Cash surplus/(deficit)	(1,051)	994	683	2,171	2,933	2,720	3,213
FX/other	(13)	193	(109)	0	0	0	0
Decrease in net debt	(1,064)	1,187	574	2,171	2,933	2,720	3,213

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	4,819	3,632	3,059	888	(2,046)	(4,766)	(7,978)
Equity	11,311	6,839	8,694	13,433	18,480	24,658	32,335
Capital employed	16,130	10,471	11,753	14,320	16,435	19,892	24,356
Net debt/Equity	0%	53%	35%	7%	-11%	-19%	-25%
Net debt/Net debt & Equity	30%	35%	26%	6%	-12%	-24%	-33%
NAV	53.2	34.6	38.9	47.4	54.4	65.8	80.6
ROAE	33%	14%	30%	28%	27%	29%	21%
ROACE	24%	10%	22%	26%	29%	33%	28%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	37,021	33,286	28,180	28,180	28,180	28,180	28,180
Core net debt (inc. associates)	4,287	4,226	3,346	1,973	(579)	(3,406)	(6,372)
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Less: Peripheral assets	0	0	0	0	0	0	0
EV	41,308	37,512	31,525	30,153	27,600	24,774	21,808
Net income before minorities	3,433	1,255	2,333	3,349	4,114	5,349	6,526
DDA + exploration	437	455	347	390	411	433	455
Other group non-cash items	(493)	1,152	(398)	(573)	(640)	(1,869)	(3,093)
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	135	110	114	98	70	52	46
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	3,512	2,972	2,396	3,263	3,955	3,966	3,934
EV/DACF	11.8x	12.6x	13.2x	9.2x	7.0x	6.2x	5.5x

Occidental Petroleum

Investment Case

OXY's historically superior combination of attractive production growth, premium ROCE, and above-average free cash flow yield relative to peers eroded over the past few years as diminishing growth opportunities in the Middle East and the transition to more capex-intensive unconventional US growth adversely impacted capital efficiency… leading to a de-rating over the past two years. OXY recently spun off its California business and appears to have largely completed its portfolio transformation. Improving Permian results are needed for OXY to re-gain the superior capital efficiency required to support the valuation premium it has re-captured partly on a much stronger balance sheet than peers. While we expect shares to be well supported by its strong balance sheet, share buyback, attractive dividend yield (4.3%) and improving Permian results, we see limited potential for upside given its EV/DACF valuation premium.

Financial and Operational Outlook

Management has stated that if oil prices remain around $50/Bbl or less, OXY's 2016 budget would be less than the 4Q15 annualized run rate of ~$4.4 billion. And while management has not yet provided a production target for next year, it believes it can grow volumes while operating within cash flow. We currently forecast OXY's 2016 capex budget of ~$4.5 billion (consensus is $5.1 billion) with ~5% YoY volume growth, but see downside risk to both estimates if oil prices stay at current levels given our estimated ~$1.7 billion free cash flow deficit (post-dividend) it would generate under current futures strip prices.

Upside Scenario

Our upside case for OXY is driven by dramatic improvements in the capital efficiency of its US assets, as well as accretive sales of low-growth Middle East assets enabling OXY to improve its companywide growth rate. In this case, OXY could re-rate above its historical multiple to 8.5x normalized 2016E DACF, implying a target of $84 per share, or a 10% premium to NAV.

Downside Scenario

Our downside case assumes OXY does not realize improvements in capital efficiency and is unable to reach cash flow neutrality at $60/Bbl WTI, leading to larger than expected free cash flow deficits. In this case, we see downside support of ~$61/share, or 6.5x normalized 2016E DACF assuming it falls closer to the peer average multiple but would be supported by an implied 5.0% dividend yield.

Catalysts

2015: Sell-down of ~79.5 million units of PAGP, with potential $2.0 billion in proceeds directed to share repurchases

2015+: Monetization of CRC stake worth ~$330 million likely in an exchange offer for OXY shares

Valuation

OXY is trading at premium to global peers on EV/DACF and price/NAV. Our $72 price assumes 7.5x normalized 2016E DACF (in line with its historical average), and in line with NAV.

Occidental   Price target: $72   Upside: 3%   Neutral

Share data			
Mkt cap ($ bn)	53.2	% of S&P 500	0.47%
Mkt cap ($ bn)	53.2	Daily trading volume (m)	1.47
Price ($)	69.7	Free float	83.0%
12m high	102.37	Major shareholders: Vanguard Group	6.0%
12m low	65.73	Ssga Funds Mgmt.	4.4%
RIC code	OXY.N	BlackRock Advisors	4.4%
Bloomberg code	OXY US		

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	762	715	665	706	731	764	801
Growth	0%	-6%	-7%	6%	4%	4%	5%
Oil production (000 bbl/d)	556	533	499	523	546	577	613
Growth	1%	-4%	-6%	5%	4%	6%	6%
Gas production (000 mcf/d)	1235	1094	997	1098	1107	1117	1127
Growth	-4%	-11%	-9%	10%	1%	1%	1%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**97.99**	**93.01**	**48.98**	**52.51**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	19,132	17,131	8,226	9,157	11,804	13,397	15,158
Other Revenues	4,542	4,817	4,090	4,133	4,177	4,221	4,266
Total Revenues	**23,674**	**21,948**	**12,316**	**13,290**	**15,981**	**17,618**	**19,424**
Costs	(8,958)	(9,151)	(7,238)	(7,413)	(7,649)	(8,166)	(8,468)
Admin, G&A	0	0	0	0	0	0	0
DD&A	(5,347)	(5,147)	(4,390)	(4,784)	(4,981)	(5,188)	(5,424)
Exploration expense	(256)	(221)	(61)	(79)	(85)	(92)	(100)
Other	(543)	(682)	(304)	(334)	(368)	(405)	(445)
Adj Operating Income	**9,656**	**8,111**	**932**	**1,348**	**3,635**	**4,576**	**5,876**
Other income & Associates	(368)	(410)	(295)	(330)	(335)	(290)	(330)
Net interest	(110)	(65)	(140)	(200)	(200)	(200)	(200)
Pre-tax profit	**9,178**	**7,636**	**497**	**818**	**3,100**	**4,086**	**5,346**
Tax	(3,576)	(3,053)	(342)	(339)	(1,271)	(1,663)	(2,154)
Minorities	0	0	0	0	0	0	0
Adj Net income	**5,602**	**4,583**	**155**	**478**	**1,829**	**2,423**	**3,192**
Special items	0	0	0	0	0	0	0
Rep Net income	**5,602**	**4,583**	**155**	**478**	**1,829**	**2,423**	**3,192**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	804	781	765	741	717	713	717
EPS	$6.96	$5.87	$0.20	$0.65	$2.55	$3.40	$4.45
Adj EPS	$6.96	$5.87	$0.20	$0.65	$2.55	$3.40	$4.45
Adj CEPS	$14.43	$12.74	$5.65	$6.90	$9.95	$11.45	$13.10
DPS (net)	$1.93	$2.83	$2.95	$3.35	$3.81	$4.21	$4.61
Pay out ratio (EPS)	28%	48%	1460%	519%	149%	124%	104%
Pay out ratio (Adj CEPS)	13%	22%	52%	49%	38%	37%	35%
Tax rate	39%	40%	69%	42%	41%	41%	40%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	5,903	630	(83)	478	1,829	2,423	3,192
DD&A	5,347	4,261	4,390	4,784	4,981	5,188	5,424
Exploration	142	99	282	79	85	92	100
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	1,311	3,089	(182)	(179)	352	509	766
Working capital/other	261	792	(954)	0	0	0	0
Net cashflow from ops	**12,964**	**8,871**	**3,453**	**5,163**	**7,247**	**8,212**	**9,482**
Disposals	1,619	4,177	308	500	500	500	500
Shares issued	30	33	23	0	0	0	0
Sources	**14,613**	**13,081**	**3,784**	**5,663**	**7,747**	**8,712**	**9,982**
Capex	(9,037)	(8,930)	(5,795)	(4,500)	(5,220)	(5,918)	(6,663)
Acquisitions	(643)	(1,687)	(43)	0	0	0	0
Dividends	(1,553)	(2,210)	(2,253)	(2,479)	(2,727)	(2,999)	(3,299)
Shares purchased	0	0	0	0	0	0	0
Other	1,754	4,158	447	(3,023)	(1,163)	0	0
Applications	**(9,479)**	**(8,669)**	**(7,645)**	**(10,002)**	**(9,109)**	**(8,917)**	**(9,962)**
Cash surplus/(deficit)	2,491	4,522	(4,680)	(4,339)	(1,362)	(205)	20
FX/other	(1,720)	(1,681)	23	0	0	0	0
Decrease in net debt	**771**	**2,841**	**(4,657)**	**(4,339)**	**(1,362)**	**(205)**	**20**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	4,050	1,209	5,866	10,205	11,568	11,773	11,753
Equity	43,372	34,959	31,496	26,472	24,412	23,836	23,728
Capital employed	47,422	36,168	37,362	36,678	35,979	35,608	35,481
Net debt/equity	9%	3%	19%	39%	47%	49%	50%
Net debt/Net debt & Equity	9%	3%	16%	28%	32%	33%	33%
NAV	58.9	46.3	48.8	49.5	50.2	49.9	49.5
ROAE	13.4%	11.7%	0.5%	1.7%	7.2%	10.0%	13.4%
ROACE	11.6%	10.0%	0.5%	1.5%	5.1%	6.9%	9.0%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	71,708	73,617	53,202	51,496	49,859	49,580	49,824
Core net debt (inc. associates)	4,436	2,630	3,537	8,036	10,887	11,670	11,763
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**76,144**	**76,247**	**56,740**	**59,531**	**60,746**	**61,251**	**61,587**
Net income before minorities	5,602	4,583	155	478	1,829	2,423	3,192
DD&A + exploration	5,603	5,368	4,451	4,864	5,066	5,280	5,524
Other group non-cash items	403	6	(281)	(229)	242	461	674
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	67	39	44	117	118	119	119
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**11,675**	**9,996**	**4,368**	**5,230**	**7,255**	**8,283**	**9,509**
EV/DACF	**6.5x**	**7.6x**	**13.0x**	**11.4x**	**8.4x**	**7.4x**	**6.5x**

Oil & Natural Gas Corporation

Investment case

We believe ONGC's operational catalysts are better than those of other government oil companies, due to: 1) improved net oil prices amid falling fuel losses; and 2) better domestic oil and gas production outlook as its new marginal fields ramp-up. We believe ONGC is relatively better positioned than GEM state-owned enterprise (SOE) in this weak oil price environment and compelling on valuations. Any clarity and relief on fuel subsidy share would further improve its net crude prices. We think a risk is a higher subsidy burden, given inflation challenges and high capex/inorganic growth.

Financial and operational outlook

We see ONGC's net-oil prices beginning to come back in-line with historical trends of FY08-14, where its net-oil realization were above $50/bbl and believe this will be a positive for ONGC's earnings forecasts. Weak oil prices have raised uncertainty around E&P's earnings, however we believe ONGC is relatively better positioned than GEM state-owned enterprise (SOE) with 1) net-oil prices of $54-61/bbl improving YoY over FY16-17, despite weak oil prices on back of lower subsidy share; 2) earnings CAGR of 21% CAGR over FY15-18E and 3) attractive valuations.

While Govt's recently announced subsidy sharing mechanism is positive for ONGC's subsidy share amid this low oil price environment – we believe long-term policy clarity is critical. We believe subsidy sharing based on caps is relatively ad-hoc and does not address uncertainties on ONGC future earnings if and when oil prices recover to $70-80/bbl.

Upside scenario

Upside scenario – valuation of Rs550/share. Apart from the volatility in Brent prices, weaker rupee; Upside scenario to the business factoring - 1) domestic oil production growing at 5% per annum over FY14-16, 2) gas prices hikes by 5% per annum, 3) Net oil realization increase to $65/bbl factoring no subsidy share from FY17 onwards; 4) OVL resource hiked with disclosure of Azeri, Mozambique reserves – could potentially raise valuations to Rs550/share.

Downside scenario

Downside scenario – valuation of Rs200/share. These factors in: 1) ONGC domestic oil production stagnates at 24MMT and then declines @ 5% starting FY16, 2) gas production ramp-up from new discoveries starting FY17 is slower than expected; 3) subsidy share continues to be high; 4) no value for investments in Mozambique.

Catalysts

1) Govt's fuel loss sharing policy for upstream, improves net-oil prices over $56/bbl in subsequent quarters 2) Pick-up in ONGC's domestic oil production to +1-2% in FY16, 3) eligibility of additional premium of $1-2/unit on revised gas prices for its yet to be developed deep-water gas discoveries; 4) Supreme court clarifying on pending royalty issues, after having recently favourably cleared a similar issue of VAT liabilities.

Valuation

Our ONGC price target of Rs356 is based on 10.5x FY16E PE at +1std to its 5-yr historical averages; and values ONGC's 16% stake in Mozambique at Rs24/share (20% lower than costs factoring risk of delays). Other key assumptions – 1) no value to holdings in GAIL, IOC, Petronet LNG (which should be worth Rs30/share); 2) gradual improvement in ONGC's net-oil realization to $54/59/61 per bbl for FY16/17/18E respectively based on our expectation of lower subsidy share. We believe with valuations near distress levels – on EV/EVITDA & P/BV, 5% dividend yield providing a strong support – the stock is compelling amid oil SOEs. Policy clarity on fuel loss sharing, gas price premium for deep-water discoveries will be key triggers ahead.

Oil & Natural Gas — Price target: Rs356 — Upside: 58% — Buy

Share data				
Mkt cap (Rs m)	1,930.1	% of MSCI India		1.14%
Mkt cap ($ bn)	28.9	Daily trading volume (m)		4.6
Price (Rs)	226	Free float		25%
12m high	455	Major Shareholders	Indian Gov	68.9%
12m low	225		Life Insurance Corp	7.9%
RIC code (ADR)	ONGC.BO		IOC	7.7%
Bloomberg code	ONGC IB		GAIL	2.4%

Operating	FY13	FY14	FY15E	FY16E	FY17E	FY18E	FY19E
Production (000 boe/d)	1,118	1,067	1,079	1,100	1,143	1,159	1,175
Growth	-2%	-5%	1%	2%	4%	1%	1%
Ref thru'puts (000 b/d)	289	292	294	292	307	307	307
Growth	12%	1%	1%	-1%	5%	0%	0%
Product sales (000 b/d)	946	957	951	1,019	1,046	1,061	1,093
Growth	-2%	1%	-1%	7%	3%	2%	3%

Profit & Loss (Rm)	FY13	FY14	FY15E	FY16E	FY17E	FY18E	FY19E
Brent Crude $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
Rs/$	**54.50**	**60.00**	**63.50**	**65.00**	**64.00**	**64.00**	**64.00**
E&P	249,728	259,053	200,457	270,774	308,674	310,227	289,775
R&M	(7,569)	6,012	(17,122)	(209)	8,679	15,262	11,531
Adj Operating Income	**242,159**	**265,065**	**183,335**	**270,565**	**317,353**	**325,489**	**301,306**
Net interest	(4,850)	(6,587)	(29,232)	(23,342)	(20,149)	(14,361)	(9,274)
Other financial	0	0	0	0	0	0	0
Special items	0	0	0	0	0	0	0
Pretax profit	**367,422**	**394,134**	**273,704**	**418,561**	**492,025**	**507,416**	**468,583**
Tax	(127,519)	(127,604)	(96,974)	(146,496)	(172,209)	(177,596)	(164,004)
Minorities	2,256	(1,465)	6,606	(1,500)	(2,463)	(4,331)	(3,273)
Rep Net Income	**242,196**	**265,065**	**183,335**	**270,565**	**317,353**	**325,489**	**301,306**
Adj Net Income	**242,159**	**265,065**	**183,335**	**270,565**	**317,353**	**325,489**	**301,306**

Per Share	FY13	FY14	FY15E	FY16E	FY17E	FY18E	FY19E
No. shares (avg)	8,555.5	8,555.5	8,555.5	8,555.5	8,555.5	8,555.5	8,555.5
EPS	28.30	30.98	21.43	31.62	37.09	38.04	35.22
Adj EPS	28.30	30.98	21.43	31.62	37.09	38.04	35.22
Adj CEPS	42.45	50.37	42.50	54.76	61.34	63.50	62.68
DPS (net)	9.25	9.50	9.50	11.07	12.98	13.32	12.33
Pay out ratio (EPS)	33%	31%	44%	35%	35%	35%	35%
Pay out ratio (Adj CEPS)	22%	19%	22%	20%	21%	21%	20%
Tax rate	35%	32%	35%	35%	35%	35%	35%

Cash Flow (Rm)	FY13	FY14	FY15E	FY16E	FY17E	FY18E	FY19E
Net Income	242,196	265,065	183,335	270,565	317,353	325,489	301,306
DD&A	121,005	165,888	180,277	197,947	207,437	217,749	234,927
Other non-cash items	(90,948)	(136,974)	31,357	86,231	43,116	47,427	52,170
Working capital	(255,084)	79,639	(110,344)	174,528	3,139	4,725	37,916
Net cashflow from ops	**17,169**	**373,618**	**284,626**	**729,271**	**571,045**	**595,391**	**626,319**
Disposals	0	0	0	0	0	0	0
Shares Issued	0	0	0	0	0	0	0
Sources	**17,169**	**373,618**	**284,626**	**729,271**	**571,045**	**595,391**	**626,319**
Capex	(269,405)	(468,924)	(268,509)	(565,666)	(580,232)	(609,255)	(616,218)
Acquisitions	12,279	(26,177)	(32)	0	0	(15,000)	0
Dividends	(79,139)	(81,278)	(58,667)	(94,698)	(111,074)	(113,921)	(105,457)
Other	0	0	0	0	0	0	0
Applications	**(336,265)**	**(576,380)**	**(327,209)**	**(660,363)**	**(691,306)**	**(738,177)**	**(721,675)**
Cash surplus/(deficit)	(319,096)	(202,762)	(42,583)	68,908	(120,261)	(142,786)	(95,356)
FX/other	32,685	0	(104,081)	(16,154)	62,001	83,968	112,075
Decrease in net debt	**(286,411)**	**(202,762)**	**(146,664)**	**52,754**	**(58,260)**	**(58,818)**	**16,719**

Balance Sheet (Rm)	FY13	FY14	FY15E	FY16E	FY17E	FY18E	FY19E
Net debt	8,318	211,080	357,744	304,990	363,250	422,068	405,349
Equity	1,525,280	1,721,510	1,804,544	1,980,411	2,186,691	2,398,259	2,594,108
Capital employed	1,533,598	1,932,590	2,162,288	2,285,401	2,549,941	2,820,326	2,999,457
Net debt/Equity	1%	12%	20%	16%	17%	18%	16%
Net debt/Net debt & Equity	1%	11%	16%	13%	14%	15%	13%
NAV	179.3	225.9	252.7	267.1	298.0	329.7	350.6
ROAE	17%	16%	10%	14%	15%	14%	12%
ROACE	24%	19%	12%	17%	19%	18%	15%

EV Valuation (Rm)	FY13	FY14	FY15E	FY16E	FY17E	FY18E	FY19E
Market capitalisation	2,406,570	2,519,894	3,218,518	1,930,119	1,930,119	1,930,119	1,930,119
Core net debt (inc. associates)	(134,887)	109,699	284,412	331,367	334,120	392,659	392,659
Buy-out of minorities	19,743	24,296	26,928	24,731	24,731	24,731	24,731
Pension provisions	0	0	0	0	0	0	0
Less: Peripheral assets	21,282	47,459	47,491	47,491	47,491	62,491	62,491
EV	**2,270,143**	**2,606,430**	**3,482,367**	**2,238,725**	**2,241,478**	**2,410,000**	**2,410,000**
Net income before minorities	239,903	266,530	176,730	272,065	319,816	329,821	304,579
DDA + exploration	121,005	165,888	180,277	197,947	207,437	217,749	234,927
Other group non-cash items	0	0	0	0	0	0	0
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	3,167	4,454	18,875	15,172	13,097	9,335	6,028
Less: peripheral income/cash flow	35,000	37,000	40,000	0	0	0	0
DACF	**329,074**	**473,872**	**415,882**	**485,184**	**540,350**	**556,905**	**545,534**
EV/DACF	**6.9x**	**5.5x**	**8.4x**	**4.6x**	**4.1x**	**4.1x**	**4.2x**
EV/DACF ($)	**6.9x**	**5.5x**	**5.1x**	**4.5x**	**4.0x**	**3.9x**	**4.0x**

OMV

Investment case

OMV has put together a forceful response to the lower oil price, cutting capex materially. The cuts have preserved the dividend but production growth has been delayed to later in the decade. The nomination of a new CEO (Rainer Seele, Wintershall Chairman) has removed some of the uncertainty of the past year (resignation of CEO and head of G&P, early departure of head of E&P) and Seele has the right profile for the job, in our view. OMV's above-average gearing gives him limited room for manoeuvre, however, and some risks remain (prolonged production interruptions in Libya and Yemen, Romania tax increase). OMV's upstream portfolio sits uncomfortably high on the cost curve and significant structural cost reductions will have to take place to adapt it to the new environment. First signs of progress were visible in 1H15. Some exploration success (notably the Pelican well offshore Romania and the update on the Domino resources) and portfolio management (mainly selling assets in Downstream Gas) could help too.

Financial and operational outlook

2Q 2015 gearing stood at 33%. We estimate that 2015 cash neutrality is achieved at $71/bbl but this goes up to $81/bbl in 2017. We see gearing peaking in 2017 at 35% and still above 30% by 2020. OMV plans to raise hybrid debt by the end of the year to the tune of €500-750m, which will help its financial position. Our base case is that OMV keeps its dividend stable at €1.25/share but it is among the most vulnerable in the sector. ROACE peaked in 2008 at 14% and we estimate it will be 4% in 2015, a level at which it should remain over the next few years. We expect capex to fall from a peak of €3.8bn in 2014 to €2.8bn in 2015 and 5-year production growth (2014-2019) of 3.1% driven by growth in Norway and the UK and the return of production from Libya.

Upside scenario

Key uncertainty lies in changes to the fiscal system in Romania as the privatisation law has expired (1% move in royalties implies a ~1.3% change in EPS) and the return to production in Libya and Yemen. OMV's embryonic upstream position in the Black Sea could be important in the context of central European gas supply and carries exploration upside.
A peak 3-yr EV/DACF applied to FY18E earnings implies a valuation of ~€34/sh.

Downside scenario

Downside risks lie in a return to oversupply in the European refining market and additional delays to key upstream growth projects in the UK, Norway, Tunisia and Yemen. A 1% change to production has a ~1.5% impact on earnings in our forecast period. A $10/bbl change in the oil price has a ~7.5% impact on earnings. Libya accounts for ~10% of production and net income on a normalised basis.
A trough 3-yr EV/DACF applied to FY18E earnings implies a valuation of ~€13/sh.

Catalysts

19 October 2015	3Q15 trading update
5 November 2015	3Q15 results
2H15	New Romanian tax structure
Late 2015/early 2016	Black Sea exploration programme update
Late 2015/early 2016	Strategy update from new CEO Rainer Seele

Valuation

Our price target is set at 5.0x 2017E EV/DACF vs. sector at 5.4x, in line with the historical ~10% discount. This equates to a P/E of 8.0x and dividend yield of 5.6% (5-year average multiples of 7.5x and 4.0%, respectively). We are Neutral on OMV.

OMV   Price target: € 23   Upside: 3%   Neutral

Share data				
Mkt cap (€ bn)	7.3	Austrian Vienna		10.95%
Mkt cap ($ bn)	8.1	DJ EuroStoxx		0.15%
Price (€)	22.3	MSCI Pan-Euro		0.05%
12m high	30.5	Daily trading volume		0.55
12m low	20.1	Free float		43.6%
RIC code (ADR)	OMVV.VI	Major shareholders	Austrian government	31.5%
Bloomberg code	OMV AV		IPIC	24.9%
ADR ratio	1		Norges Bank IM	1.71%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	288	309	304	313	345	345	361
Growth	-5%	7%	-2%	3%	10%	0%	4%
Ref thru'puts (000 b/d)	434	377	350	350	350	350	350
Growth	4%	-13%	-7%	0%	0%	0%	0%
Product sales (000 b/d)	629	622	575	578	579	579	579
Growth	4%	-1%	-8%	1%	0%	0%	0%

Profit & Loss (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
$/E	**1.33**	**1.33**	**1.13**	**1.14**	**1.14**	**1.14**	**1.14**
E&P	2,085	1,669	182	480	1,394	1,942	2,280
Gas	137	101	95	124	132	147	163
R&M	462	503	942	729	641	560	561
Corporate	(37)	(32)	(10)	(80)	(80)	(90)	(100)
Adj Operating Profit	**2,647**	**2,241**	**1,209**	**1,252**	**2,086**	**2,559**	**2,904**
Net interest	(233)	(330)	(259)	(387)	(425)	(435)	(441)
Associates	(76)	153	318	321	352	354	355
Other financial	0	0	0	0	0	0	0
Pretax Profit	**2,338**	**2,064**	**1,268**	**1,187**	**2,013**	**2,478**	**2,818**
Tax	(1,190)	(469)	(106)	(352)	(786)	(1,090)	(1,268)
Minorities	(427)	(462)	(249)	(212)	(306)	(357)	(396)
Adjusted CCS Net Income	**1,111**	**1,133**	**913**	**623**	**920**	**1,031**	**1,153**
Specials (incl. inventory moves)	251	(775)	(229)	0	(0)	0	0
Reported Net Income	**1,362**	**358**	**684**	**623**	**920**	**1,031**	**1,153**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	327.3	327.3	327.3	327.3	327.3	327.3	327.3
EPS	3.55	1.09	2.09	1.90	2.81	3.15	3.52
Adj EPS	3.41	3.46	2.79	1.90	2.81	3.15	3.52
Adj CEPS	10.31	12.80	10.16	8.63	10.47	10.95	11.70
DPS (net)	1.25	1.25	1.25	1.25	1.25	1.25	1.25
EPS/ADR	$4.71	$1.45	$2.36	$2.17	$3.21	$3.59	$4.02
Adj EPS/ADR	$4.52	$4.60	$3.15	$2.17	$3.21	$3.59	$4.02
Adj CEPS/ADR	$13.69	$17.01	$11.46	$9.84	$11.93	$12.48	$13.34
DPS (net)/ADR	$1.66	$1.66	$1.41	$1.43	$1.43	$1.43	$1.43
Pay out ratio (EPS)	37%	36%	45%	66%	44%	40%	35%
Pay out ratio (Adj CEPS)	12%	10%	12%	14%	12%	11%	11%
Tax rate	-32%	-29%	10%	30%	39%	44%	45%

Cash Flow (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	1,729	613	909	835	1,227	1,388	1,550
DD&A	2,246	3,056	2,412	2,203	2,506	2,551	2,677
Other non-cash items	(538)	(408)	(341)	(232)	(263)	(261)	(251)
Working capital	673	405	(413)	(32)	(298)	(6)	(272)
Net cashflow from ops	**4,110**	**3,666**	**2,567**	**2,774**	**3,171**	**3,673**	**3,703**
Disposals	835	516	66	0	0	0	0
Shares	0	0	0	0	0	0	0
Sources	**4,945**	**4,183**	**2,632**	**2,774**	**3,171**	**3,673**	**3,703**
Capex	(2,809)	(3,834)	(2,769)	(2,730)	(2,875)	(3,080)	(3,230)
Acquisitions	(1,946)	0	0	0	0	0	0
Dividends	(627)	(650)	(530)	(660)	(660)	(660)	(660)
Other	(48)	(76)	(56)	0	0	0	0
Applications	**(5,430)**	**(4,560)**	**(3,354)**	**(3,390)**	**(3,535)**	**(3,740)**	**(3,890)**
Cash (deficit)/surplus	(485)	(377)	(722)	(616)	(364)	(67)	(187)
FX/other	(1,223)	(154)	(49)	0	0	(0)	0
Decrease in net debt	**(1,708)**	**(531)**	**(771)**	**(616)**	**(364)**	**(67)**	**(187)**

Balance Sheet (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	4,371	4,902	5,673	6,289	6,653	6,721	6,908
Total debt	4,895	5,240	5,916	6,533	6,897	6,964	7,152
Equity	14,545	14,602	15,259	15,434	16,000	16,728	17,617
Capital employed	18,916	19,504	20,932	21,723	22,653	23,448	24,525
Net debt/Equity	39%	43%	46%	49%	50%	48%	47%
Net debt/Net debt & Equity	28%	30%	31%	33%	33%	33%	32%
NAV	44	45	47	47	49	51	54
ROAE	7.6%	7.8%	6.1%	4.1%	5.9%	6.3%	6.7%
ROACE	5.7%	5.5%	4.2%	2.7%	3.9%	4.2%	4.6%

EV Valuation (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	11,231	9,693	7,303	7,303	7,303	7,303	7,303
Core net debt (inc. associates)	5,115	5,992	6,643	7,337	7,827	8,043	8,170
Buy-out of minorities	5,667	4,619	2,490	2,119	3,063	3,567	3,964
Pension provisions	508	530	530	530	530	530	530
Peripheral assets	0	0	0	0	0	0	0
EV	**22,521**	**20,834**	**16,966**	**17,289**	**18,723**	**19,443**	**19,967**
Net income before minorities	1,678	1,595	1,162	835	1,227	1,388	1,550
DD&A + exploration	2,246	3,056	2,412	2,203	2,506	2,551	2,677
Other group non-cash items	(538)	(408)	(341)	(232)	(263)	(261)	(251)
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	172	261	232	273	260	244	243
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**3,558**	**4,504**	**3,464**	**3,078**	**3,729**	**3,922**	**4,218**
EV/DACF	**6.3x**	**4.6x**	**4.9x**	**5.6x**	**5.0x**	**5.0x**	**4.7x**
EV/DACF $	**6.3x**	**4.6x**	**4.9x**	**5.6x**	**5.0x**	**4.9x**	**4.7x**

Petrobras

Investment case

We like Petrobras's strong access to vast/accretive pre-salt resource base ($45-55/bbl break-even), recent change in strategy towards stronger investment discipline/disposal of non-core assets, and clearer pricing policy ahead (in contrast to historical subsidies to gasoline/diesel consumers). 2015 can be seen as an inflection year for Petrobras, with a new Board and new management team. However, we are concerned about company's leverage (the highest within global oils) and increased Beta to Brazil's outlook, vis-à-vis: (i) weaker macroeconomic outlook for the country (including weakening BRL) and high level of unhedged dollar-denominated debt (note that company has been selling at above import parity since the end of 2014); and, (ii) still-unclear impact of the ongoing corruption scandal on costs (given for now still unchanged, high local content policy) or production volumes (we expect 5% production CAGR thru 2020). Our price target reflects risk of an equity issuance at depressed valuations, but we also note very limited free cash flow thru 2017-18E to reduce balance sheet pressure. Having said so, we think company will be able offer above-average dividend yields for the PN shares.

Financial and operational outlook

2Q15 net gearing was 5x EBITDA and >50% of total capital and will grow further due to weaker BRL. However, leverage should start coming down, possibly in 2016 and more likely in 2017, due to asset sales plus production growth, higher Brent/inflation-based increase in domestic prices, and more effective cost control. We estimate cash-flow neutrality is achieved at $65/bbl in 2015, and see company as cash flow positive in 2016 ex-asset sale should it be able to increase domestic prices in line with inflation. Returns should be the lowest in 2015 but we estimate they can improve substantially in 2016-17. We expect capex to fall from a peak of $40-48bn p.a. in 2010-13 to $25-30bn p.a. in 2015-20 and 5-year production growth of 5% driven by pre-salt barrels.

Upside scenario

$19-21/sh. This would reflect improved profitability outlook and limited equity issuance needs: 1) an improved political/macroeconomic outlook including a market-friendlier approach to private/foreign investment and a stronger Real; 2) more aggressive asset sale including control of fuel distribution unit, gas&power or Upstream blocks, or even refineries; 3) a fair 5bn barrel transfer of rights (ToR) price settlement with Car Wash-related costs reflected in the asset revaluation; 4) above 5% production CAGR through 2020E, with above-20% returns for Santos basin under the licensing model; and 5) no equity issuances, but rather accretive asset disposals and continued cheap funding.

Downside scenario

R$7-9/sh. This would translate into a c.70% discount to NAV based on: (i) low Brent in the long run/subsidies of domestic fuel prices; (ii) development of Brazil's oil service industry at the expense of the company's profitability; (iii) additional tax liabilities or local content-related penalties. The following could be negative for Petrobras: 1) BRL depreciation without an offsetting refinery gate price hike or more in asset sale; 2) inefficient capex and above-inflation cost pressure; 3) new acquisitions of acreage with upfront payments to the parent/still high local content requirements and/or expensive 5bn ToR price settlement; 4) sluggish production growth combined with higher lifting costs; 5) further capex overruns in ongoing projects; 6) higher taxes or Car Wash-related liabilities; 7) balance sheet deterioration with equity issuances at depressed stock prices.

Catalysts

Oct. 2015	13th bid round for Brazil
Nov. 2015	3Q15 results; refinery gate price hikes for gasoline/diesel?
2015YE	$3bn in asset sale including IPO of BRD fuel distribution units
Mar. 2016	2015FY results and dividend policy
Apr. 2016	Shareholders meeting with election of Board members
2Q16	Strategy plan for 2016-20e
2016	Additional $12bn in asset sale (including gas&power, Upstream)
2016	Final valuation of the Transfer of Rights barrels
2017	New auction under PSA/changes to oil legislation to allow new players to operate pre-salt under PSA

Valuation

We have a Neutral rating on Petrobras ON shares and a Buy rating on the PN shares, as the latter trade at >10% discount to the ON shares despite c10pp higher dividend yields in the near-term. Our PT is based at 32-40% discount to NAV so as to reflect high leverage and lower capex flexibility with lower Brent/weaker BRL. The stock trades at high EV/DACF multiples in the near-term.

Petrobras (PN) Price target: R$17 Upside: 100% Buy

Share data				
Mkt cap (R$ bn)	121.4	Brazil Bovespa		13.16%
Mkt cap ($ bn)	31.6	DJ Emerging Oil and Gas		4.25%
Price (R$)	8.5	MSCI EM		1.43%
12m high	22.82	Daily trading volume (m)		57.4
12m low	7.76	Free float		54%
RIC code (ADR)	PETR4.SA	Major shareholders:	Brazilian Government	28.7%
Bloomberg code	PETR4 BZ		BNDES	17.3%
ADR ratio	2		Caixa de Previdencia BB	6.3%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	2521	2623	2740	2791	2948	3103	3292
Growth	-3%	4%	4%	2%	6%	5%	6%
Ref thru'puts (000 b/d)	2,189	2,310	2,285	2,482	2,589	2,647	2,688
Growth	5%	6%	-1%	9%	4%	2%	2%
Product sales (000 b/d)	2,792	2,899	2,956	3,107	3,219	3,293	3,370
Growth		4%	2%	5%	4%	2%	2%

Profit & Loss (R$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
R$/$	**2.18**	**2.36**	**3.31**	**3.65**	**3.64**	**3.74**	**3.85**
E&P Operating Profit	64415	57806	19226	27612	64794	85370	106421
Gas and Power Operating Profit	1,029	(732)	1,852	(2,062)	(2,190)	(2,336)	(2,492)
R&M Operating Profit	(24,028)	(17,685)	34,926	47,291	21,173	12,365	3,394
Corporate Operating Profit	(10,615)	(14,039)	(21,274)	(16,191)	(17,214)	(18,394)	(19,660)
Other Operating Profit	3,562	4,173	(2,565)	(1,138)	1,803	2,609	3,152
Rep Operating Income	**34,363**	**29,523**	**32,166**	**55,512**	**68,366**	**79,614**	**90,816**
Interest Expense	(5,795)	(9,255)	(17,645)	(21,792)	(21,919)	(21,070)	(20,405)
Interest Income	3,911	4,634	5,647	8,874	7,249	5,867	3,839
Other Income & Associates	1095	451	-49	-51	-53	-55	-57
FX	(4,318)	721	(9,062)	(12,742)	(11,511)	(4,850)	(4,972)
Non-Operating Result	0	(50,845)	(3,000)	(10,000)	0	0	0
Pretax profit	**29,256**	**(24,771)**	**8,058**	**19,801**	**42,133**	**59,506**	**69,220**
Tax	(5,147)	3,892	(2,893)	(7,797)	(11,023)	(15,943)	(18,828)
Minorities	563	337	(110)	(269)	(573)	(810)	(942)
Other items	(1,102)	(1,045)	(408)	(1,100)	(1,556)	(2,178)	(2,520)
Rep Net Income	**23,570**	**-21,587**	**4,647**	**10,635**	**28,982**	**40,575**	**46,931**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	13,044	13,044	13,044	13,044	13,044	13,044	13,044
EPS	1.81	-1.65	0.36	0.82	2.22	3.11	3.60
Adj EPS	1.81	-1.65	0.36	0.82	2.22	3.11	3.60
Adj CEPS	3.99	0.70	3.07	3.77	5.76	6.87	7.57
DPS (net)	0.96	0.00	0.93	0.93	0.93	0.93	1.06
Adj EPS/ADR	$0.83	-$0.70	$0.11	$0.22	$0.61	$0.83	$0.93
Adj CEPS/ADR	$1.83	$0.30	$0.93	$1.03	$1.58	$1.84	$1.96
DPS (net)/ADR	$0.44	$0.00	$0.28	$0.25	$0.25	$0.25	$0.27
Pay out ratio (EPS)	53%	0%	260%	114%	42%	30%	29%
Pay out ratio (Adj CEPS)	24%	0%	30%	25%	16%	13%	14%
Tax rate	18%	16%	36%	39%	26%	27%	27%

Cash Flow (R$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	23,570	(21,587)	4,647	10,635	28,982	40,575	46,931
DD&A	28,467	30,677	35,957	38,488	46,115	49,041	51,776
Exploration	0	0	0	0	0	0	0
Other non-cash items	0	0	0	0	0	0	0
Working capital	(10,936)	(9,489)	(961)	(1,776)	(3,808)	(3,277)	(3,622)
Net cashflow from ops	**41,101**	**(399)**	**39,643**	**47,347**	**71,289**	**86,339**	**95,085**
Disposals	0	0	10,500	34,821	18,221	0	0
Shares Issued	0	0	0	0	0	0	0
Sources	**41,101**	**(399)**	**50,143**	**82,167**	**89,510**	**86,339**	**95,085**
Capex	(104,416)	(87,141)	(90,113)	(88,270)	(91,134)	(91,452)	(92,074)
Acquisitions	0	0	0	0	0	0	0
Dividends	(9,301)	0	(4,411)	(4,411)	(7,245)	(10,144)	(11,733)
Other	(12,508)	(30,514)	(29,034)	(11,088)	588	767	1,309
Applications	**(126,225)**	**(117,655)**	**(123,559)**	**(103,769)**	**(97,791)**	**(100,828)**	**(102,497)**
Cash surplus/(deficit)	(85,124)	(118,054)	(73,416)	(21,602)	(8,282)	(14,490)	(7,412)
FX/other	7,748	66,852	9,103	18,814	7,525	9,137	8,973
Decrease in net debt	**(77,376)**	**(51,202)**	**(64,313)**	**(2,787)**	**(757)**	**(5,353)**	**1,561**

Balance Sheet (R$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	230,541	281,743	346,056	348,843	349,600	354,953	353,392
Total debt	277,121	351,035	458,739	413,282	405,478	391,513	388,754
Equity	347,940	308,848	283,942	290,165	311,902	342,333	377,531
Capital employed	578,481	590,591	629,998	639,009	661,502	697,286	730,923
Net debt/Equity	66%	91%	122%	120%	112%	104%	94%
Net debt/Net debt & Equity	40%	48%	55%	55%	53%	51%	48%
NAV	44.3	45.3	48.3	49.0	50.7	53.5	56.0
ROAE	7%	-7%	2%	4%	9%	12%	14%
ROACE	4%	-4%	-1%	0%	3%	5%	6%

EV Valuation (R$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	230,090	210,817	121,354	121,354	121,354	121,354	121,354
Core net debt (inc. associates)	199,596	262,044	322,984	356,618	358,151	360,828	362,626
Buy-out of minorities	1,394	1,874	1,874	1,874	1,874	1,874	1,874
Pension provisions	29,453	45,918	49,785	52,299	54,690	57,451	60,352
Less: Peripheral assets	0	0	0	0	0	0	0
EV	**460,533**	**520,653**	**495,997**	**532,144**	**536,069**	**541,507**	**546,206**
Net income before minorities	23,007	(21,924)	4,756	10,904	29,555	41,384	47,873
DDA + exploration	34,911	37,812	43,292	47,125	56,221	60,954	65,839
Other group non-cash items	4,318	(721)	9,062	12,742	11,511	4,850	4,972
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	(1,243)	(3,050)	(7,919)	(8,526)	(9,682)	(10,034)	(10,933)
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**60,993**	**12,117**	**49,191**	**62,246**	**87,605**	**97,154**	**107,750**
EV/DACF	**7.6x**	**43.0x**	**10.1x**	**8.5x**	**6.1x**	**5.6x**	**5.1x**
EV/DACF $	**7.6x**	**31.7x**	**9.7x**	**8.5x**	**6.0x**	**5.5x**	**5.1x**

PetroChina

Investment case

About half of PetroChina's roughly 22bn boe reserves and about a third of oil & gas production are in natural gas. Furthermore by 2016, we expect the company to import about 30bcm of natural gas by pipeline and about 10bcm in the form of LNG. Given this, PetroChina's future is highly leveraged to natural gas prices and demand in China. Unfortunately the outlooks for gas price and demand are at risk in China and somewhat at odds with each other. PetroChina needs a high gas price to justify its high import costs and high incremental costs of domestic production. Meanwhile, gas demand in China could be constrained if gas prices are too high. This suggests that a re-balancing of China's now oversupplied natural gas market could be potentially painful for PetroChina in the coming years. Low oil prices should also constrain the outlook for PetroChina in the near-term, although under our long-term US$80/bbl forecast, PetroChina's upstream oil & gas business implies value in the long-term.

Financial and operational outlook

China has entered a natural gas supply glut and PetroChina will need to absorb much of the oversupply. While we have factored in some success in PetroChina delaying the inflow of its gas imports, we believe weak gas demand could force the company to reduce its domestic production target. We forecast gas production to decline by 2% in 2015 (versus the guidance management had set out at the beginning of the year for 6% growth), and we expect production to grow just 4% in 2016. In order to dispose of gas volume, we believe PetroChina will need to cut its gas prices even before the NDRC officially cuts prices. A fall in gas imports costs amidst sticky domestic prices suggest the company's import losses could nearly halve this year versus 2014. However, as we expect gas prices to get cut, import losses should grow again in 2016. Meanwhile, we expect weak oil prices and capex cuts to lead to at least a 3-4% drop in crude oil production in both 2015 and 2016. The upstream capex cut of 10-15% at PetroChina this year is limited when compared to the cut at global peers, although the cut could prove steeper than management's existing market guidance. We expect PetroChina will continue to maintain its 45% payout ratio. As such, we expect moderately negative cash flow in 2015 and break-even cash flow in 2016. If the oil price recovers as we expect to US$70/bbl, the company's cash flow could break even and balance sheet begin to de-leverage.

Upside scenario

If long-term Brent oil price expectations were raised to US$90/bbl (versus US$80/bbl), the chemical business reaches peak cycle conditions, and refined product demand grows a faster than expected 6% in 2016, these would raise our NAV by 18% to HK11.6/sh.

Downside scenario

If long-term Brent price expectations fell to reflect the futures strip (long-term US$65-70/bbl), it would lower our NAV to HK$7.5/sh (23% below our base-case NAV).

Catalysts

We believe the following are potential catalysts at PetroChina in the next 12 months: 1) earnings disappointment versus consensus; 2) China gas price cuts in Sept or Oct; 3) disappointing gas demand growth in China; 4) delayed group restructuring and asset disposals; 5) potential renegotiation of LNG import contracts; 6) successful roll-out of Euro 4 diesel, coupled with premium pricing and margins.

Valuation

Our HK$7.8/sh price target assumes a 20% discount to our NAV estimate of HK$9.8/sh. Our NAV estimate assumes long-term US$80/bbl Brent (10% WACC).

PetroChina | Price target: HK$7.8 | Upside: 34% | Buy

Share data				
Mkt cap (Rmb bn)	1,846.2	% of MSCI EM		0.56%
Mkt cap ($ bn)	238.2	% of MSCI EMF + EAFE		0.12%
Price (HK$)	5.8	% of MSCI Energy		0.77%
12m high	11.62	Daily trading volume (m)		109.4
12m low	5.81	Free float (H-share)		99%
RIC code (ADR)	0857.HK	Major shareholders	CNPC/Chinese gov't	86.5%
Bloomberg code	857 HK		Aberdeen	0.9%
ADR ratio	1		Blackrock	0.5%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	3835	3942	3833	3823	3876	3936	4000
Growth	4%	3%	-3%	0%	1%	2%	2%
Ref thru'puts (000 b/d)	2719	2769	2796	2824	2853	2881	2910
Growth	10%	2%	1%	1%	1%	1%	1%
Product sales (000 b/d)	2474	2662	2821	2980	3139	3296	3461
Growth	7%	8%	6%	6%	5%	5%	5%

Profit & Loss (Rmb m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**97.99**	**93.01**	**48.98**	**52.51**	**65.00**	**70.00**	**75.00**
Rb/$	**6.15**	**6.16**	**6.40**	**6.60**	**6.80**	**6.80**	**6.80**
E&P Operating Profit	189,698	186,897	51,797	59,762	124,437	159,539	186,995
Gas and Power Operating Profit	28,888	13,126	35,067	21,055	15,106	14,484	17,655
R&M Operating Profit	(16,830)	(18,139)	15,334	19,253	22,670	24,516	24,709
Chems Operating Profit	0	0	0	0	0	0	0
Corporate Operating Profit	(13,114)	(12,051)	(12,051)	(12,051)	(12,292)	(12,538)	(12,789)
Adj Operating Profit	**188,642**	**169,833**	**90,147**	**88,019**	**149,920**	**186,001**	**216,571**
Special Items	0	0	0	0	0	0	0
Rep Operating Income	**188,642**	**169,833**	**90,147**	**88,019**	**149,920**	**186,001**	**216,571**
Interest Expense	(23,081)	(23,319)	(26,088)	(28,612)	(29,613)	(29,380)	(28,437)
Interest Income	2,222	1,596	2,000	2,000	2,000	2,000	2,100
Other Income & Associates	10,280	8,649	5,500	7,500	7,500	7,500	7,500
Pretax profit	**178,063**	**156,759**	**71,559**	**68,907**	**129,808**	**166,121**	**197,734**
Tax	(35,789)	(37,731)	(15,854)	(14,738)	(29,354)	(38,069)	(45,656)
Minorities	(12,675)	(11,856)	(7,242)	(6,500)	(10,045)	(11,653)	(13,839)
Adj Net Income	**129,599**	**107,172**	**48,463**	**47,669**	**90,409**	**116,399**	**138,239**
Special items	0	0	0	0	0	0	0
Rep Net Income	**129,599**	**107,172**	**48,463**	**47,669**	**90,409**	**116,399**	**138,239**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	183,021	183,021	183,021	183,021	183,021	183,021	183,021
EPS	0.71	0.59	0.26	0.26	0.49	0.64	0.76
Adj EPS	0.71	0.59	0.26	0.26	0.49	0.64	0.76
Adj CEPS	1.60	1.56	1.22	1.26	1.54	1.71	1.86
DPS (net)	0.32	0.26	0.12	0.12	0.22	0.29	0.34
Adj EPS/ADR	$0.12	$0.10	$0.04	$0.04	$0.07	$0.09	$0.11
Adj CEPS/ADR	$0.26	$0.25	$0.19	$0.19	$0.23	$0.25	$0.27
DPS (net)/ADR	$0.05	$0.04	$0.02	$0.02	$0.03	$0.04	$0.05
Pay out ratio (EPS)	45%	45%	45%	45%	45%	45%	45%
Pay out ratio (Adj CEPS)	20%	17%	10%	9%	14%	17%	18%
Tax rate	20%	24%	22%	21%	23%	23%	23%

Cash Flow (Rmb m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	142,274	116,715	53,705	54,170	100,454	128,052	152,078
DD&A	129,607	144,221	140,401	144,442	153,390	158,886	164,657
Exploration	12,036	11,032	10,029	9,799	10,543	11,028	11,208
Other non-cash items	(29,294)	(20,058)	(29,377)	(8,616)	7,116	1,215	87
Working capital	(10,303)	25,491	(10,792)	2,504	3,292	1,273	1,265
Net cashflow from ops	**231,645**	**277,401**	**163,965**	**202,297**	**274,795**	**300,454**	**329,295**
Disposals	38,687	0	0	0	0	0	0
Shares Issued	0	0	0	0	0	0	0
Sources	**270,332**	**277,401**	**163,965**	**202,297**	**274,795**	**300,454**	**329,295**
Capex	(304,100)	(291,729)	(266,000)	(237,379)	(250,881)	(244,353)	(257,299)
Acquisitions	(7,341)	(3,893)	0	0	0	0	0
Dividends	(53,470)	(48,228)	(21,808)	(21,451)	(40,684)	(52,380)	(62,207)
Other	(99)	0	0	0	0	0	0
Applications	**(312,928)**	**(298,830)**	**(269,172)**	**(237,302)**	**(274,623)**	**(282,245)**	**(307,801)**
Cash surplus/(deficit)	(42,596)	(21,429)	(105,207)	(35,004)	172	18,209	21,494
FX/other	0	0	0	(0)	0	0	(0)
Decrease in net debt	**(42,596)**	**(21,429)**	**(105,207)**	**(35,004)**	**172**	**18,209**	**21,494**

Balance Sheet (Rmb m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	444,222	465,651	570,858	605,862	605,690	587,481	565,987
Total debt	495,629	539,429	620,051	651,581	664,535	641,256	622,602
Equity	1,132,735	1,175,894	1,202,549	1,228,767	1,278,491	1,342,511	1,418,542
Capital employed	1,576,957	1,641,545	1,773,407	1,834,629	1,884,182	1,929,992	1,984,529
Net debt/Equity	39%	40%	47%	49%	47%	44%	40%
Net debt/Net debt & Equity	28%	28%	32%	33%	32%	30%	29%
ROAE	12%	9%	4%	4%	7%	9%	10%
ROACE	9%	8%	4%	4%	6%	7%	8%

EV Valuation (Rmb m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	1,895,704	1,795,701	1,846,245	1,846,245	1,846,245	1,846,245	1,846,245
Core net debt (inc. associates)	422,924	454,937	518,254	588,360	605,776	596,586	576,734
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Less: Peripheral assets	0	0	0	0	0	0	0
EV	**2,318,628**	**2,250,638**	**2,364,499**	**2,434,605**	**2,452,021**	**2,442,830**	**2,422,979**
Net income before minorities	142,274	116,715	53,705	54,170	100,454	128,052	152,078
DDA + exploration	141,643	155,253	150,429	154,241	163,933	169,914	175,865
Other group non-cash items	(29,294)	(20,058)	(29,377)	(8,616)	7,116	1,215	87
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	16,667	16,494	18,751	20,920	21,368	21,106	20,256
less: peripheral income/cash flow	(10,228)	(10,962)	(7,500)	(7,500)	(7,500)	(7,500)	(7,500)
DACF	**261,062**	**257,442**	**186,008**	**213,214**	**285,372**	**312,786**	**340,785**
EV/DACF	**8.9x**	**8.7x**	**12.7x**	**11.4x**	**8.6x**	**7.8x**	**7.1x**
EV/DACF ($)	**7.4x**	**7.3x**	**11.0x**	**10.1x**	**7.8x**	**7.1x**	**6.4x**

Pioneer Natural Resources

Investment Case

PXD boasts low financial leverage and a huge position in the Permian's northern Wolfcamp, one of the most attractive and early stage liquids rich shales in the US. PXD is targeting a companywide production growth rate of +10% YoY in 2015 and 15% per annum growth in 2016-18 (including 20% per annum oil growth). PXD has both the balance sheet and one of the largest unbooked resource inventories in one of the lowest cost shale plays that make it an attractive candidate for investors looking to add to E&P. While PXD trades at an EV/DACF premium to peers given its much larger unbooked resource inventory, it trades at a material discount to the group on the more relevant price/NAV.

Financial and Operational Outlook

Despite the material drop in oil prices since June, PXD continues to expect to follow through on its plans outlined in early June to add 20 rigs by 1Q16. Notably, PXD's acceleration plans were originally conceived when oil prices were ~$50/Bbl WTI so management is comfortable with maintaining acceleration at such levels given its attractive asset base, strong hedge position, and healthy balance sheet. While the company is targeting ~15% YoY production growth (with 20% YoY oil growth) in 2016, we estimate this growth along with the increased rig count will require a capex budget of ~$3.3 billion (up from $2.25 billion this year), implying a large free cash flow deficit of ~$1.6 billion at the current futures strip.

Upside Scenario

Our upside case assumes continued success in the appraisal of PXD's northern and southern Wolfcamp positions, providing a steady stream of NAV-accretive catalysts as it continues to boost its unbooked resource estimates for the play. Assuming EURs of 900 MMBoe in the northern Wolfcamp (vs. current guidance of 780 MBoe) and 650 MBoe in the southern Wolfcamp (vs. guidance of 575 MBoe), we estimate PXD's NAV would increase from our current ~$194/share estimate to ~$237/share. And in an M&A scenario it could be taken out at NAV.

Downside Scenario

Our downside case assumes disappointing results from PXD's planned Wolfcamp appraisal and concerns that this once high growth company may have to reduce growth expectations materially if oil stays well below $50/Bbl for a prolonged period. Under this scenario, we could see PXD's normalized 2016E EV/normalized DACF multiple contracting to 8.0x, in line with its historical average and implying downside to $108/share. Relative to our normalized price forecasts, a $0.50/MMBtu and $5.00/Bbl decline in natural gas and crude oil prices, respectively, reduces this estimate to ~$98/share.

Catalysts

2015: Downspacing results in the Southern Wolfcamp and Eagle Ford.

Valuation

While PXD trades at a premium to peers on EV/DACF given its attractive growth profile, it trades at a discount to the group on price/NAV. Our $156 price target assumes 0.80x NAV.

Pioneer Natural Res. Price target: $156 Upside: 32% Buy

Share data				
Mkt cap ($ bn)	17.7	% of S&P 500		0.16%
Mkt cap ($ bn)	17.7	Daily trading volume (m)		0.41
Price ($)	118.4	Free float		67.0%
12m high	206.82	Major shareholders	T. Rowe Price	7.1%
12m low	107.24		Capital Research	7.0%
RIC code	PXD.N		Wellington Mgmt.	6.8%
Bloomberg code	PXD US			

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	171	186	201	231	266	307	353
Growth	11%	9%	8%	15%	15%	15%	15%
Oil production (000 bbl/d)	109	127	141	173	206	242	285
Growth	18%	17%	11%	23%	19%	18%	18%
Gas production (000 mcf/d)	374	352	359	346	363	389	408
Growth	0%	-6%	2%	-4%	5%	7%	5%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**97.99**	**93.01**	**48.98**	**52.51**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	3,352	3,640	2,136	2,728	4,015	5,120	7,303
Other Revenues	230	138	886	606	45	47	47
Total Revenues	**3,582**	**3,778**	**3,022**	**3,333**	**4,060**	**5,167**	**7,350**
Costs	(932)	(931)	(892)	(1,063)	(1,261)	(1,454)	(1,674)
Admin, G&A	(300)	(333)	(329)	(354)	(396)	(444)	(464)
DD&A	(993)	(1,068)	(1,372)	(1,619)	(1,863)	(2,146)	(2,543)
Exploration expense	(107)	(108)	(109)	(116)	(122)	(128)	(147)
Adj Operating Income	**1,250**	**1,338**	**321**	**180**	**417**	**995**	**2,521**
Other income & Associates	(134)	(79)	(172)	(98)	(95)	(100)	(100)
Net interest	(184)	(184)	(189)	(200)	(200)	(200)	(200)
Pre-tax profit	**933**	**1,075**	**(39)**	**(118)**	**122**	**695**	**2,221**
Tax	(288)	(385)	24	42	(47)	(265)	(847)
Minorities	(39)	0	0	0	0	0	0
Adj Net income	**606**	**690**	**(15)**	**(75)**	**76**	**430**	**1,374**
Special items	0	0	0	0	0	0	0
Rep Net income	**606**	**690**	**(15)**	**(75)**	**76**	**430**	**1,374**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	137	144	150	151	151	151	151
EPS	$4.41	$4.79	($0.10)	($0.50)	$0.50	$2.85	$9.10
Adj EPS	$4.41	$4.79	($0.10)	($0.50)	$0.50	$2.85	$9.10
Adj CEPS	$15.32	$16.30	$10.25	$11.35	$14.55	$20.35	$33.30
DPS (net)	$0.04	$0.08	$0.08	$0.08	$0.08	$0.08	$0.08
Pay out ratio (EPS)	1%	2%	-78%	-16%	16%	3%	1%
Pay out ratio (Adj CEPS)	0%	1%	1%	1%	1%	0%	0%
Tax rate	0%	0%	1%	0%	0%	0%	0%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	(800)	930	(321)	(75)	76	430	1,374
DD&A	980	1,047	1,358	1,605	1,848	2,131	2,528
Exploration	32	90	71	116	122	128	147
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	1,913	340	328	(57)	22	250	832
Working capital/other	20	(41)	(274)	0	0	0	0
Net cashflow from ops	**2,145**	**2,366**	**1,160**	**1,588**	**2,068**	**4,007**	**4,881**
Disposals	736	877	457	450	0	0	0
Shares issued	1,281	980	0	0	0	0	0
Sources	**4,162**	**4,223**	**1,617**	**2,038**	**2,068**	**4,007**	**4,881**
Capex	(2,639)	(3,243)	(1,950)	(3,050)	(3,050)	(3,500)	(3,850)
Acquisitions	0	0	0	0	0	0	0
Dividends	(6)	(12)	(12)	(12)	(12)	(12)	(12)
Shares purchased	0	0	0	0	0	0	0
Other	(261)	(336)	(276)	(250)	(300)	(300)	(300)
Applications	**(2,906)**	**(3,591)**	**(2,238)**	**(3,312)**	**(3,362)**	**(3,812)**	**(4,162)**
Cash surplus/(deficit)	1,257	632	(621)	(1,274)	(1,294)	(874)	719
FX/other	274	(343)	292	0	0	0	0
Decrease in net debt	**1,531**	**289**	**(329)**	**(1,274)**	**(1,294)**	**195**	**719**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	2,175	1,886	2,215	3,488	4,783	5,656	3,222
Equity	6,615	8,589	8,276	8,189	8,253	8,671	11,226
Capital employed	8,789	10,475	10,491	11,677	13,035	14,327	14,449
Net debt/equity	33%	22%	27%	43%	58%	65%	29%
Net debt/Net debt & Equity	25%	18%	21%	30%	37%	29%	22%
NAV	63.9	72.7	69.9	77.3	86.3	91.4	95.7
ROAE	10.3%	9.1%	-0.2%	-0.9%	0.9%	5.1%	13.0%
ROACE	8.2%	7.9%	0.5%	0.5%	1.6%	4.0%	10.7%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	21,286	27,577	17,757	17,875	18,877	18,877	18,877
Core net debt (inc. associates)	2,940	2,030	2,050	2,851	4,135	4,039	3,582
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**24,227**	**29,607**	**19,807**	**21,552**	**22,559**	**22,915**	**22,458**
Net income before minorities	645	690	(15)	(75)	76	430	1,374
DD&A + exploration	1,100	1,176	1,480	1,735	1,985	2,274	2,690
Other group non-cash items	362	482	72	54	137	369	964
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	181	183	234	226	159	196	199
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**2,287**	**2,531**	**1,771**	**1,940**	**2,357**	**3,269**	**5,227**
EV/DACF	**10.6x**	**11.7x**	**11.2x**	**10.7x**	**7.6x**	**5.3x**	**4.3x**

PTT E&P

Investment case

PTT E&P is a relatively low-cost and stable cashflow E&P company, as most of its earnings are derived from low-cost gas fields in Thailand and Myanmar. The company also has strong balance sheet. Nonetheless, its reserve life is short and potential growth in home country is muted. PTTEP's cash cost is at US$22/boe, while net profit breakeven is at US$42/boe as depreciation and F&D costs have been increasing in the past few years. In 2015-2016E when oil price stays low, PTTEP earnings could be sensitive to oil price movement. Furthermore, its gas prices in Thailand and Myanmar lag oil price by 6-12 months. This could lead PTTEP earnings to lag oil price recovery in the upturn. PTTEP's strong balance sheet and positive FCF provide it with a relatively defensive dividend yield and opportunity for M&A. We think new gas contracts (which will replace the expiring contracts) in the Gulf of Thailand could provide upside risk for PTTEP's reserve. Meanwhile, PTTEP's M&A priority is to utilise extra cash to acquire producing gas assets in SE Asia.

Financial and operational outlook

We forecast PTTEP's net profit to decline further by 6% in 2016E, driven by low production growth of 3% and the decline in realized gas price (lag fuel oil price by 6-12 months). After 14% capex cut this year, PTTEP should have positive FCF in 2015E. We think FCF could be neutral in 2016E if the company does not cut capex further. PTTEP production volume could decline by 3% pa in 2017E and 2018E. The effort of the company to acquire producing gas assets in SE Asia, if successful, could change production growth outlook in the medium term. In terms of reserve, PTTEP's reserve replacement could improve significantly post the FID of Mozambique offshore area 1 project, which it has 8.5% stake) and PTTEP could participate in the bidding or extension of expiring gas contracts in the Gulf of Thailand.

Upside scenario

Our upside scenario assumes an average oil price of US$90/barrel (2016 to long term). We derive upside valuation of Bt150.00/share, assuming 0% discount to NAV and WACC of 10%. This includes value of all PTTEP's producing assets and development assets in Thailand, Myanmar and Algeria, but excludes exploration assets especially in Mozambique. We think the development of the Mozambique project, if it yields good return on capital, could be a major upside risk to PTTEP share price and valuation, given that it could double PTTEP's reserve in the long-run.

Downside scenario

Our downside scenario assumes forward Brent future prices of US$52/58/60/63/bbl for 2015/16/17/18 and long-term, respectively. We derive downside valuation of Bt88.00/share, assuming 20% discount to NAV and WACC of 10%. This includes value of all PTTEP's producing assets, but excludes all the development and exploration assets.

Catalysts

Q415	Thailand new energy minister to announce direction of upstream policy
Q116	Algeria Bir Seba project starts production
2016	FID of Mozambique offshore project (management guidance)
2016-2017	Decision on expiring gas contracts in the Gulf of Thailand
2017-18	FID of Myanmar M3 gas project
2019	Production starts for Ubon oil project in the Gulf of Thailand

Valuation

Our price target of Bt93/share implies 20% discount to NAV (using WACC of 10% and UBS long-term oil curve of US$55/57/70/80/bbl).

PTT E&P (F) Price target: ฿93 Upside: 27% Buy

Share data				
Mkt cap (Bt bn)	291.8	% of MSCI EM		0.09%
Mkt cap ($ bn)	8.1	% of MSCI EMF + EAFE		0.02%
Price (Bt)	73.5	% of MSCI Energy		0.12%
12m high	165.5	Daily trading volume (m)		7.26
12m low	68.5	Free float		45.4%
RIC code	PTTEP.BK	Major shareholders	PTT Public	65.3%
Bloomberg code	PTTEP TB		Thai NDVR Company	4.3%
ADR ratio	1		State Street	2.8%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	293	322	331	340	330	321	330
Growth	-38%	10%	3%	3%	-3%	-3%	3%
Oil production (000 bbl/d)	101	130	99	105	99	83	81
Growth	-63%	29%	-24%	6%	-5%	-17%	-2%
Gas production (000 mcf/d)	1148	1148	1390	1412	1386	1429	1495
Growth	-2%	0%	21%	2%	-2%	3%	5%

Profit & Loss (Bt m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	97.99	93.01	48.98	52.51	65.00	70.00	75.00
THBb/$	30.65	32.46	34.09	34.09	34.09	34.09	34.09
E&P Revenues	220,337	243,342	194,347	202,163	216,705	217,595	230,994
Other Revenues	4,636	4,475	4,652	4,739	4,411	4,411	4,411
Total Revenues	224,973	247,817	198,998	206,902	221,116	222,006	235,405
Costs	(25,490)	(27,815)	(24,678)	(25,641)	(25,766)	(25,432)	(26,912)
Admin, G&A	(10,517)	(11,835)	(11,516)	(13,178)	(13,063)	(12,945)	(13,591)
Royalties	(25,077)	(25,508)	(20,225)	(21,095)	(22,966)	(25,292)	(26,942)
DD&A	(50,351)	(83,215)	(101,686)	(106,750)	(104,966)	(98,033)	(99,856)
Exploration expense	(5,351)	(10,826)	(5,553)	(6,701)	(6,946)	(7,170)	(7,815)
Adj Operating Income	108,186	88,618	35,340	33,537	47,408	53,134	60,289
Other income & Associates	2,376	7,182	2,300	2,315	2,331	2,447	2,570
Net interest	(5,167)	(7,699)	(7,350)	(6,785)	(5,485)	(4,835)	(4,835)
Pre-tax profit	98,536	57,608	26,483	29,067	44,253	50,746	58,024
Tax	(42,351)	(36,117)	(7,609)	(8,050)	(13,177)	(17,640)	(23,064)
Minorities	0	0	0	0	0	0	0
Adj Net income	63,044	51,985	22,682	21,016	31,076	33,107	34,960

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	3,970	3,970	3,970	3,970	3,970	3,970	3,970
EPS	14.15	5.41	4.75	5.29	7.83	8.34	8.81
Adj EPS	15.88	13.09	5.71	5.29	7.83	8.34	8.81
Adj CEPS	26.84	34.06	30.37	32.18	34.27	33.03	33.96
DPS (net)	5.80	6.00	2.50	2.00	2.83	2.83	3.43
Adj EPS/ADR	$0.52	$0.40	$0.17	$0.16	$0.23	$0.24	$0.26
Adj CEPS/ADR	$0.88	$1.05	$0.89	$0.94	$1.01	$0.97	$1.00
DPS (net)/ADR	$0.19	$0.18	$0.07	$0.06	$0.08	$0.08	$0.10
Pay out ratio (EPS)	37%	46%	44%	38%	36%	34%	39%
Pay out ratio (Adj CEPS)	22%	18%	8%	6%	8%	9%	10%
Tax rate	43%	63%	29%	28%	30%	35%	40%

Cash Flow (Bt m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	63,044	51,985	22,682	21,016	31,076	33,107	34,960
DD&A	50,351	83,215	101,686	106,750	104,966	98,033	99,856
Exploration	5,351	10,826	5,553	6,701	6,946	7,170	7,815
Associate income	(190)	(112)	(300)	(315)	(331)	(347)	(365)
Other non-cash items	0	0	0	0	0	0	0
Working capital/other	2,852	(1,566)	(5,420)	586	1,053	66	993
Net cashflow from ops	121,408	144,347	124,200	134,737	143,711	138,028	143,259
Disposals	0	0	0	0	0	0	0
Shares issued	0	0	0	0	0	0	0
Sources	121,408	144,347	124,200	134,737	143,711	138,028	143,259
Capex	(105,574)	(108,687)	(90,044)	(123,732)	(137,988)	(94,020)	(86,796)
Acquisitions	0	0	0	0	0	0	0
Dividends	(24,067)	(23,891)	(9,925)	(7,940)	(11,232)	(11,232)	(13,613)
Shares purchased	0	0	0	0	0	0	0
Other	11,426	(19,804)	(2,965)	(3,113)	(3,269)	(3,432)	(3,604)
Applications	(118,216)	(152,382)	(102,934)	(134,785)	(152,489)	(108,684)	(104,013)
Cash surplus/(deficit)	3,192	(8,034)	21,266	(48)	(8,777)	29,344	39,246
FX/other	(12,486)	52,866	(9,360)	(6,701)	(6,946)	(7,170)	(7,815)
Decrease in net debt	(9,294)	44,832	11,906	(6,749)	(15,724)	22,174	31,431

Balance Sheet	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	54,661	9,829	(2,077)	4,671	20,395	(1,779)	(33,210)
Equity	384,537	413,620	422,569	435,645	455,489	477,364	498,710
Capital employed	439,197	423,449	420,491	440,316	475,884	475,585	465,501
Net debt/equity	14%	2%	0%	1%	4%	0%	-7%
Net debt/Net debt & Equity	12%	2%	0%	1%	4%	0%	-7%
NAV	110.6	106.7	105.9	110.9	119.9	119.8	117.3
ROAE	17.7%	13.0%	5.4%	4.9%	7.0%	7.1%	7.2%
ROACE	30.6%	25.1%	10.3%	9.7%	12.6%	13.6%	15.8%

EV Valuation (Bt m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	638,090	611,773	301,719	301,719	301,719	301,719	301,719
Core net debt (inc. associates)	54,661	9,829	(2,077)	4,671	20,395	(1,779)	(33,210)
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	692,751	621,602	299,642	306,390	322,114	299,940	268,509
Net income before minorities	56,186	21,490	18,874	21,016	31,076	33,107	34,960
DD&A + exploration	55,702	94,041	107,239	113,450	111,912	105,203	107,670
Other group non-cash items	0	0	(0)	0	0	0	0
Core associates non-cash items	(190)	(112)	(300)	(315)	(331)	(347)	(365)
Core post-tax interest + pension cost	5,167	7,699	7,350	6,785	5,485	4,835	4,835
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	116,865	123,118	133,162	140,937	148,144	142,798	147,101
EV/DACF	5.9x	5.0x	2.3x	2.2x	2.2x	2.1x	1.8x
EV/DACF ($)	5.9x	5.0x	2.3x	2.2x	2.2x	2.1x	1.8x

PTT Public

Investment case

Thailand's energy reform policy, which includes gas price increases and the restructuring of PTT's refinery assets, should enhance its cash flow position during the low oil price period in 2015-2016E, in our view. The restructuring of PTT's asset portfolio, which includes separation of the transmission pipeline business and possible carve-out of its oil distribution business, if it were to happen, could crystallise value of PTT's core assets in the medium term. This is due to the stable cash flow and relatively high return of PTT's pipeline business, and high growth in non-oil profit from the oil distribution business. PTT plans to use most of its capex to expand the gas pipeline, LNG terminal and oil storage capacity. This should create a stable but lower-return income stream for the company.

Financial and operational outlook

We expect PTT's pre-ex NP to grow 9% and 13% in 2016E/17E, despite lower earnings contribution from upstream PTTEP. Growth in core profit from gas distribution business and downstream refining & chemical should offset weak earnings from PTTEP. At the core gas business, operating margin and cash flow would be supported by falling gas cost (PTT's contracted gas cost lags fuel oil price by about 6-12 months). Aside from resilient cashflow and earnings at the parent company, PTT should realise extra cash from asset divestitures. This includes a non-core refining asset (Star Petroleum Refining Co.) and non-performing assets (palm oil and overseas gas pipeline). We think this would increase its FCF significantly in 2016E.

Upside scenario

Valuation of Bt410.00/share: We assume a long-term oil price of US$90/bbl, full gas-price liberalisation by 2016E and no conglomerate discount at listed subsidiaries. In this case, we expect a rapid margin recovery of the core gas business after the potential squeeze in H115 due to the oil price correction.

Downside scenario

Valuation of Bt240.00/share: Our downside scenario assumes forward Brent future prices of US$52/58/60/63/bbl for 2015/16/17/18 and long-term, respectively, a 20% NAV discount at PTTEP and, a 10% conglomerate discount at other listed subsidiaries. We factor in a slow rise in NGV price to Bt14/kg in 2018E. In this case, PTT's core business EBITDA should continue to grow in 2016E supported by falling gas cost.

Catalysts

4Q15	Divestment and IPO of Star Petroleum Refining (SPRC)
2H15	Ongoing recovery of the gas business, supported by lower gas cost
2016	NGV price increase

Valuation

Our price target of Bt320/share is derived using sum-of-the-part methodology. We value the core gas and oil distribution business using DCF (WACC of 9%), PTTEP at 20% discount to NAV, and listed downstream subsidiaries at 10% discount to UBS price targets and market prices. For non-listed assets, we value it at 1x PBV. Our price target implies target PE of 10.8x 2017E (on brent assumption of US$70/bbl).

PTT Public Company — Price target: ฿320 — Upside: 23% — Buy

Share data				
Mkt cap (THB bn)	742.6	% of MSCI EM		0.24%
Mkt cap ($ bn)	20.7	% of MSCI EMF + EAFE		0.05%
Price (THB)	260	% of MSCI Energy		0.39%
12m high	397	Daily trading volume (m)		5.8
12m low	240	Free float		49%
RIC code (ADR)	PTT.BK	Major shareholders	Thailand government	51.11%
Bloomberg code	PTT TB		Vayupak Fund	14.90%
ADR ratio	1		Thai NVDR	5.78%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	293	322	331	340	330	321	330
Growth	6%	10%	3%	3%	-3%	-3%	3%
Ref thru'puts (000 b/d)	370	356	275	275	275	275	275
Growth	12%	-4%	-23%	0%	0%	0%	0%
Product sales (000 b/d)	413	442	455	469	478	488	498
Growth	4%	7%	3%	3%	2%	2%	2%

Profit & Loss (THB m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**97.99**	**93.01**	**48.98**	**52.51**	**65.00**	**70.00**	**75.00**
THBb/$	**30.65**	**32.46**	**33.50**	**33.50**	**33.50**	**33.50**	**33.50**
E&P Operating Profit	103,550	84,144	30,688	28,798	42,997	48,723	55,878
Gas and Power Operating Profit	30,985	43,680	29,155	42,555	54,000	54,035	56,594
R&M Operating Profit	9,489	7,929	12,614	13,175	13,215	13,251	13,281
Chems Operating Profit	769	2,801	3,026	2,987	2,948	1,766	1,725
Corporate Operating Profit	10,868	9,271	(3,640)	(12,332)	1,225	2,910	(66)
Adj Operating Profit	**155,661**	**147,824**	**71,843**	**75,182**	**114,384**	**120,685**	**127,412**
Interest Expense	(20,593)	(22,218)	(21,114)	(22,401)	(24,843)	(26,669)	(27,595)
Interest Income	0	0	0	0	0	0	0
Other Income & Associates	27,804	2,453	24,126	24,356	23,768	23,219	23,219
Pretax profit	**162,872**	**128,059**	**74,855**	**77,137**	**113,309**	**117,235**	**123,036**
Tax	(44,795)	(41,406)	(7,814)	(6,077)	(16,785)	(24,190)	(31,522)
Minorities	(20,473)	(6,703)	(3,968)	(2,690)	(10,352)	(11,879)	(12,508)
Adj Net Income	**97,605**	**79,950**	**63,072**	**68,370**	**86,172**	**81,166**	**79,006**
Special items	(4,513)	(24,155)	0	0	0	0	0
Rep Net Income	**93,091**	**55,795**	**63,072**	**68,370**	**86,172**	**81,166**	**79,006**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	2,856	2,856	2,856	2,856	2,856	2,856	2,856
EPS	32.59	19.53	22.08	23.94	30.17	28.42	27.66
Adj EPS	34.17	27.99	22.08	23.94	30.17	28.42	27.66
Adj CEPS	60.86	65.92	52.65	55.51	65.81	67.34	69.86
DPS (net)	12.99	14.00	11.00	12.00	13.00	14.00	14.00
Adj EPS/ADR	NA	NA	NA	NA	NA	NA	NA
Adj CEPS/ADR	NA	NA	NA	NA	NA	NA	NA
DPS (net)/ADR	$0.42	$0.43	$0.33	$0.36	$0.39	$0.42	$0.42
Pay out ratio (EPS)	38%	50%	50%	50%	43%	49%	51%
Pay out ratio (Adj CEPS)	21%	21%	21%	22%	20%	21%	20%
Tax rate	28%	32%	10%	8%	15%	21%	26%

Cash Flow (THB m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	93,091	55,795	63,072	68,370	86,172	81,166	79,006
DD&A	76,244	108,341	87,323	90,190	101,811	111,173	120,536
Exploration	78,915	93,826	80,730	87,579	93,412	89,718	93,118
Other non-cash items	27,098	(15,064)	(14,539)	(12,970)	(9,898)	(4,703)	3,447
Working capital	(93,098)	(160,562)	(191,400)	(113,720)	(116,401)	(105,649)	(108,442)
Net cashflow from ops	**182,250**	**82,336**	**25,186**	**119,448**	**155,096**	**171,706**	**187,665**
Disposals	0	0	0	0	0	0	0
Shares Issued	0	0	0	0	0	0	0
Sources	**182,250**	**82,336**	**25,186**	**119,448**	**155,096**	**171,706**	**187,665**
Capex	(134,184)	(155,261)	(145,707)	(159,724)	(193,685)	(156,042)	(156,042)
Acquisitions	0	0	0	0	0	0	0
Dividends	(46,368)	(48,837)	(31,419)	(34,276)	(37,132)	(39,988)	(39,988)
Other	(185)	231	0	0	0	0	0
Applications	**(180,736)**	**(203,867)**	**(177,126)**	**(194,000)**	**(230,817)**	**(196,030)**	**(196,030)**
Cash surplus/(deficit)	1,514	(121,531)	(151,940)	(74,552)	(75,721)	(24,324)	(8,365)
FX/other	(326,875)	34,837	(0)	0	0	(0)	0
Decrease in net debt	**(325,361)**	**(86,694)**	**(151,940)**	**(74,552)**	**(75,721)**	**(24,324)**	**(8,365)**

Balance Sheet (THB m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	325,361	412,055	563,994	638,546	714,267	738,591	746,956
Total debt	485,731	728,812	678,812	678,812	740,812	740,812	750,812
Equity	682,311	683,287	714,940	749,034	798,074	839,252	878,270
Capital employed	1,148,203	1,466,749	1,654,310	1,765,646	1,900,759	1,978,140	2,038,031
Net debt/Equity	40%	39%	52%	57%	60%	60%	58%
Net debt/Net debt & Equity	28%	28%	34%	36%	38%	37%	37%
ROAE	15%	12%	9%	9%	11%	10%	9%
ROACE	17%	11%	6%	6%	8%	7%	8%

EV Valuation (THB m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	934,313	919,032	754,063	754,063	754,063	754,063	754,063
Core net debt (inc. associates)	325,361	412,055	563,994	638,546	714,267	738,591	746,956
Buy-out of minorities	133,254	255,970	373,392	376,721	383,242	394,357	406,551
Pension provisions	0	0	0	0	0	0	0
Less: Peripheral assets	(295,341)	(351,519)	(418,783)	(498,991)	(594,634)	(708,682)	(844,676)
EV	**1,097,587**	**1,235,538**	**1,272,666**	**1,270,339**	**1,256,937**	**1,178,329**	**1,062,894**
Net income before minorities	118,077	86,653	67,040	71,060	96,524	93,045	91,514
DDA + exploration	76,244	108,341	87,323	90,190	101,811	111,173	120,536
Other group non-cash items	27,098	(15,064)	(14,539)	(12,970)	(9,898)	(4,703)	3,447
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pensio	(20,593)	(22,218)	(21,114)	(22,401)	(24,843)	(26,669)	(27,595)
less: peripheral income/cash flow	(44,795)	(41,406)	(7,814)	(6,077)	(16,785)	(24,190)	(31,522)
DACF	**156,031**	**116,305**	**110,896**	**119,802**	**146,808**	**148,656**	**156,380**
EV/DACF	**7.0x**	**10.6x**	**11.5x**	**10.6x**	**8.6x**	**7.9x**	**6.8x**
EV/DACF $	**7.0x**	**10.6x**	**11.5x**	**10.6x**	**8.6x**	**7.9x**	**6.8x**

Range Resources

Investment Case

Range Resources has one of the premier natural gas asset bases in the E&P sector. The company should grow production by ~20% in 2015 despite depressed natural gas prices, and expects to increase volumes by 20-25% per annum over the long term. In addition to its massive unbooked resource base that is >7 times the size of its proved reserve base (even before including Utica potential) and attractive growth profile, we believe its sector-leading position in the largest and lowest-cost shale gas play means it could benefit from any sector consolidation. However, RRC trades at material premium to its gassy peers on EV/EBITDX and the more relevant metric of P/NAV. Given its full valuation as well as high financial leverage, we rate it Neutral.

Financial and Operational Outlook

RRC has already disclosed its outlook for 2016 capital budget range: a budget of $550 million would deliver production growth of ~10% YoY and ~$890 million would enable ~20% YoY volume growth. This compares to 2015 guidance of an $870 million capital budget and 20% YoY production growth. In addition, RRC estimates a ~$270 million capex budget next year would enable it to keep 2016 production flat from its estimated 4Q15 production rate, which would equate to ~4% YoY growth. We forecast 2016 production growth of ~18% YoY with a capex budget of ~$850 million, which should leave it with a modest free cash flow deficit of ~$275 million under current futures strip prices, in line with 2015.

Upside Scenario

Our upside scenario assumes RRC is acquired, given its enviable growth profile, above-average unbooked resource inventory and operational expertise in the largest and lowest-cost shale gas play in the US. Using current strip commodity prices as a base, we estimate a $0.50/MMBtu increase in gas and a $10/Bbl increase in crude oil prices would imply an NAV of ~$50/share.

Downside Scenario

Our downside case assumes RRC fails to deliver its medium-term production targets, negatively impacting its long-term growth visibility and prompting investors to value it more on cash flow metrics than NAV. Under this scenario, we could see RRC's 2016E normalized EV/EBITDX multiple eroding to ~9.0x, more in line with gassy peers and implying a share price of $36. Compared to the UBS normalized price assumptions, a $0.50/MMBtu decline in natural gas prices and a $10/Bbl decline in crude oil prices would reduce this valuation to $27/share.

Catalysts

2015: Two additional Utica well tests in SW Marcellus; could open up 40 Tcfe of resource potential on its 400,000 acres.

Valuation

RRC is the most richly valued among gassy peers on EV/EBITDX and price/NAV. Our $40 price target assumes ~0.85x NAV and 10x normalized 2016E EBITDX.

Range Resources   Price target: $40   Upside: 10%   Neutral

Share data			
Mkt cap ($ bn)	6.2	% of S&P 500	0.08%
Mkt cap ($ bn)	6.2	Daily trading volume (m)	0.8
Price ($)	36.5	Free float	97.8%
12m high	75.20	Major shareholders: T. Rowe Price	8.5%
12m low	33.20	Vanguard Group	8.1%
RIC code	RRC.N	SailingStone Capital	5.6%
Bloomberg code	RRC US		

Operating	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Total production (000 boe/d)	157	194	233	276	331	397	477
Growth	25%	24%	20%	18%	20%	20%	20%
Oil production (000 bbl/d)	36	63	69	78	93	112	134
Growth	34%	75%	11%	12%	20%	20%	20%
Gas production (000 mcf/d)	725	786	983	1189	1427	1712	2055
Growth	22%	8%	25%	21%	20%	20%	20%

Profit & Loss ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
WTI $/bbl	**97.99**	**93.01**	**48.98**	**52.51**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	1,684	1,869	1,625	1,744	2,437	3,156	3,924
Other Revenues	(5)	(3)	(21)	(15)	(15)	(10)	(10)
Total Revenues	**1,679**	**1,866**	**1,605**	**1,729**	**2,422**	**3,146**	**3,914**
Costs	(426)	(516)	(606)	(789)	(958)	(1,153)	(1,379)
Admin, G&A	(144)	(149)	(151)	(161)	(174)	(188)	(203)
DD&A	(492)	(551)	(624)	(733)	(877)	(1,052)	(1,263)
Exploration expense	(60)	(59)	(34)	(67)	(80)	(87)	(104)
Adj Operating Income	**556**	**591**	**190**	**(21)**	**333**	**667**	**965**
Other income & Associates	0	0	4	(1)	(5)	0	1
Net interest	(177)	(169)	(167)	(170)	(174)	(174)	(172)
Pre-tax profit	**380**	**422**	**27**	**(192)**	**154**	**493**	**794**
Tax	(147)	(161)	(10)	73	(59)	(192)	(310)
Minorities	0	0	0	0	0	0	0
Adj Net income	**233**	**260**	**17**	**(119)**	**95**	**300**	**484**
Special items	0	0	0	0	0	0	0
Rep Net income	**233**	**260**	**17**	**(119)**	**95**	**300**	**484**

Per Share	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
No. shares (avg)	163	166	169	170	171	172	173
EPS	$1.43	$1.57	$0.10	($0.70)	$0.55	$1.75	$2.80
Adj EPS	$1.43	$1.57	$0.10	($0.70)	$0.55	$1.75	$2.80
Adj CEPS	$5.73	$6.22	$4.05	$3.55	$6.50	$9.50	$12.50
DPS (net)	$0.16	$0.16	$0.16	$0.16	$0.16	$0.16	$0.16
Pay out ratio (EPS)	11%	10%	163%	NA	29%	9%	6%
Pay out ratio (Adj CEPS)	3%	3%	4%	5%	2%	2%	1%
Tax rate	39%	38%	38%	38%	38%	39%	39%

Cash Flow ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net Income	116	634	(108)	(119)	95	300	484
DD&A	500	579	624	733	877	1,052	1,263
Exploration	6	16	23	67	80	87	104
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	165	(244)	129	(76)	61	196	313
Working capital/other	(43)	(31)	22	0	0	0	0
Net cashflow from ops	**744**	**954**	**691**	**605**	**1,113**	**1,636**	**2,164**
Disposals	316	181	14	0	0	0	0
Shares issued	0	397	38	75	75	75	75
Sources	**1,059**	**1,531**	**743**	**680**	**1,188**	**1,711**	**2,239**
Capex	(1,159)	(1,200)	(825)	(750)	(1,013)	(1,316)	(1,645)
Acquisitions	(132)	(212)	(81)	(75)	(75)	(75)	(75)
Dividends	(26)	(27)	(27)	(27)	(27)	(28)	(28)
Shares purchased	0	0	0	0	0	0	0
Other	6	(3)	(90)	(25)	(25)	(25)	(25)
Applications	**(1,311)**	**(1,442)**	**(1,023)**	**(877)**	**(1,140)**	**(1,444)**	**(1,773)**
Cash surplus/(deficit)	(252)	89	(280)	(197)	48	267	466
FX/other	(130)	41	52	0	0	0	0
Decrease in net debt	**(382)**	**130**	**(228)**	**(197)**	**48**	**267**	**466**

Balance Sheet ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net debt	3,388	3,258	3,486	3,684	3,636	3,369	2,903
Equity	2,414	3,457	3,389	3,318	3,460	3,808	4,340
Capital employed	5,802	6,715	6,875	7,001	7,096	7,177	7,242
Net debt/equity	140%	94%	103%	111%	105%	88%	67%
Net debt/Net debt & Equity	58%	49%	51%	53%	51%	47%	40%
NAV	35.6	40.5	40.7	41.2	41.5	41.7	41.8
ROAE	9.8%	8.9%	0.5%	-3.5%	2.8%	8.3%	11.9%
ROACE	6.3%	6.0%	1.8%	-0.2%	2.9%	5.8%	8.3%

EV Valuation ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Market capitalisation	12,416	13,074	6,173	6,210	6,246	6,283	6,319
Core net debt (inc. associates)	3,197	3,323	3,372	3,585	3,660	3,502	3,136
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**15,613**	**16,397**	**9,545**	**9,795**	**9,906**	**9,785**	**9,455**
Net income before minorities	233	260	17	(119)	95	300	484
DD&A + exploration	553	610	658	799	957	1,139	1,367
Other group non-cash items	147	161	10	(76)	61	196	313
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	177	169	167	170	174	174	172
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**1,109**	**1,201**	**851**	**774**	**1,287**	**1,810**	**2,336**
EV/DACF	**14.1x**	**13.7x**	**11.2x**	**12.6x**	**7.7x**	**5.4x**	**4.0x**

Reliance Industries

Investment case

We expect Reliance Industries' (RIL) core petrochemical, refining and domestic exploration and production (E&P) businesses to improve over the next two years. Given the government's focus on encouraging domestic production, and steps to clarify on deep-water gas prices shortly, we think problems with KG-D6 should be resolved shortly, and gas production visibility could also improve. With the US$11bn petrochemical capex on track to become operational by 2016, its refinery cost advantages with the US$5bn pet-coke gasifier operational by 2016 (enabling a steady US$8.5/bbl plus gross refining margin [GRM]), and retail also contributing to its EBITDA, we forecast a 15% EBITDA CAGR over FY15-18E (versus -1% in FY11-15).

Financial and operational outlook

The sharp correction in oil prices, refining/petchem margin volatility and depreciating rupee make for volatile times. However, we think that Reliance is amongst the best positioned to outperform peers (Indian and regional) given its superior refinery complexity; integrated petchem facilities benefiting from lower feedstock costs. Further, Reliance's high share of exports (~60% of sales) should help partly offset the impact of weak rupee on its forex debt (~85% of debt). We believe Reliance provides a good proxy to India's GDP recovery, and its petchem capex-led growth and higher GRMs of near $1/bbl due to gasifer starting in 2016 should offset concerns on KG-D6 and Shale profits due to low oil prices. Telecom capex is an overhang, however we think a successful launch technologically by Dec'15 and good subscriber addition could help offset investor scepticism.

Upside scenario

In our upside scenario, we assume: 1) a GRM of US$10.5/bbl, and downstream valued at 7x FY17E EV/EBITDA; 2) increased valuations for the KG-D6 business, factoring in a much stronger ramp-up in production following an arbitration settlement by 2016 and given benefits from premium gas prices from FY18E onwards; 3) the US shale business profit from high oil/gas prices are valued at 9x FY16E EBITDA, with some gains from a stake sale; and 4) investments in telecom, hotels and real estate are valued 35% above book value. In this case, we estimate a valuation of Rs1,570/share.

Downside scenario

In our downside scenario, we assume: 1) a GRM of US$7.5/bbl (refining) and a 3-4% petchem price decline, with a stable downstream valuation of 6x FY16E EV/EBITDA; 2) a slow production ramp-up for KG-D6 and gas prices of US$5.60/mmbtu starting from FY17E; 3) a sharp drop in US shale profit, valued at 7x FY16E EBITDA (at a discount to its peers); 4) nil value ascribed to telecom investments adjusted for debt. In this case, we estimate a valuation of Rs805/share

Catalysts

We believe catalysts could include: 1) a steady US$8.5/bbl-plus GRM better than regional peers; 2) improved petchem product margins due to better demand and global supply delays; 3) the government offering more clarity on premium gas price with eligibility for RIL's new deep-water fields; 4) RIL's KG-D6 gas production improving gradually over FY17-18E; and 5) improved disclosure on telecom business strategy, with encouraging responses on 4G pilot test over next few months, followed by successful technology launch by Dec'2015 resulting in strong subscriber additions.

Valuation

We see compelling risk/reward at our sum-of-parts based price target to Rs1090. The key assumptions for our sum-of-parts based price target are: 1) refining business at 7x FY16E EBITDA recognizing its superior complexity advantage; 2) the petchem business at 7x FY16E EBITDA; 3) we ascribe value only to KG-D6's ongoing production with no value for its exploration blocks; 4) we value the shale gas business at 7x FY16E EBITDA, factoring in a 28% decline in FY16E EBITDA following low oil & gas prices; and 5) we value Retail business at 1.3x FY16E EV/Sales given its sustained growth; 6) telecom investment at Rs90/share based on our telecom analyst DCF value (which works to 0.5x FY16E BV).

Reliance Industries | Price target: Rs1,090 | Upside: 30% | Buy

Share data				
Mkt cap (Rs bn)	2458.9	% of MSCI India		6.20%
Mkt cap ($ bn)	36.9	Daily trading volume (m)		3.9
Price (Rs)	835.6	Free float		55.0%
12m high	1050.5	Major shareholders	Life Insurance Corp.	9.10%
12m low	810.4		Kankhal Inv & Trading	4.59%
RIC code (ADR)	RELI.BO		Bhuvanesh Enterprises	4.16%
Bloomberg code	RIL IB		Ajitesh Enterprises	3.92%
ADR ratio	1			

Operating	FY13	FY14	FY15	FY16	FY17	FY18	FY19
Production (000 boe/d)	363	239	245	224	240	272	317
Growth	46%	-34%	2%	-9%	7%	13%	16%
Ref thru'puts (000 b/d)	1,376	1,366	1,376	1,376	1,376	1,376	1,376
Growth	12%	-1%	1%	0%	0%	0%	0%

Profit & Loss (Rm)	FY13	FY14	FY15	FY16	FY17	FY18	FY19
Brent Crude $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
Rs/$	**54.50**	**60.40**	**61.50**	**65.00**	**64.00**	**64.00**	**64.00**
E&P	157,020	150,180	170,770	211,420	205,925	157,034	148,998
R&M	128,150	133,920	158,270	201,592	192,068	135,380	125,574
Petchem	71,590	84,030	82,910	117,159	174,238	271,037	350,387
Adj Operating Income	**218,130**	**235,980**	**258,170**	**310,033**	**342,702**	**401,105**	**489,407**
Net interest	(34,630)	(38,360)	(33,160)	(61,787)	(64,308)	(71,076)	(67,832)
Other financial	0	0	0	0	0	0	0
Special items	0	0	0	0	0	0	0
Pretax profit	**262,170**	**287,630**	**311,140**	**322,159**	**346,049**	**394,086**	**487,035**
Tax	(53,310)	(62,150)	(74,740)	(77,318)	(83,052)	(98,522)	(121,759)
Minorities	(70)	(550)	(740)	0	0	0	0
Rep Net Income	**208,790**	**224,930**	**235,660**	**244,841**	**262,997**	**295,565**	**365,276**
Adj Net Income	**208,790**	**224,930**	**235,660**	**244,841**	**262,997**	**295,565**	**365,276**

Per Share	FY13	FY14	FY15	FY16	FY17	FY18	FY19
No. shares (avg)	2,942.7	2,942.7	2,942.7	2,942.7	2,942.7	2,942.7	2,942.7
EPS	70.95	76.44	80.08	83.20	89.37	100.44	124.13
Adj EPS	70.95	76.44	80.08	83.20	89.37	100.44	124.13
Adj CEPS	109.12	114.50	119.32	123.99	139.97	157.86	183.84
DPS (net)	10.51	9.50	10.00	11.00	13.00	15.00	17.00
EPS/ADR	$2.60	$2.53	$2.60	$2.56	$2.79	$3.14	$3.88
Adj EPS/ADR	$2.60	$2.53	$2.60	$2.56	$2.79	$3.14	$3.88
Adj CEPS/ADR	$2.00	$1.90	$1.94	$1.91	$2.19	$2.47	$2.87
DPS (net)/ADR	$0.19	$0.16	$0.16	$0.17	$0.20	$0.23	$0.27
Pay out ratio (EPS)	0%	0%	0%	0%	0%	0%	0%
Pay out ratio (Adj CEPS)	0%	0%	0%	0%	0%	0%	0%
Tax rate	20%	22%	24%	24%	24%	25%	25%

Cash Flow (Rm)	FY13	FY14	FY15	FY16	FY17	FY18	FY19
Net Income	208,790	224,930	235,660	244,841	262,997	295,565	365,276
DD&A	112,320	112,010	115,470	120,029	148,878	168,980	175,724
Other non-cash items	53,296	0	0	(0)	0	0	(0)
Working capital	(35,120)	83,292	86,078	(113,697)	80,847	3,184	4,474
Net cashflow from ops	**339,286**	**420,232**	**437,208**	**251,173**	**492,722**	**467,728**	**545,475**
Disposals	0	0	0	0	0	0	0
Shares Issued	(430)	40	30	0	0	0	0
Sources	**338,856**	**420,272**	**437,238**	**251,173**	**492,722**	**467,728**	**545,475**
Capex	(354,558)	(449,094)	(1,046,820)	(458,714)	(301,548)	(232,478)	(185,339)
Acquisitions	272,920	(259,111)	(293,160)	212,512	167,333	0	0
Dividends	(30,920)	(27,892)	(29,430)	(36,420)	(43,041)	(49,663)	(56,285)
Other	1,500	100	641,327	(266,455)	(78,531)	(16,890)	(18,579)
Applications	**(111,058)**	**(735,996)**	**(728,083)**	**(549,076)**	**(255,786)**	**(299,031)**	**(260,203)**
Cash surplus/(deficit)	227,798	(315,724)	(290,845)	(297,903)	236,936	168,696	285,272
FX/other	(54,808)	(76,231)	741	0	0	0	0
Decrease in net debt	**172,990**	**(391,956)**	**(290,105)**	**(297,903)**	**236,936**	**168,696**	**285,272**

Balance Sheet (Rm)	FY13	FY14	FY15	FY16	FY17	FY18	FY19
Net debt	73,220	465,176	755,280	1,053,183	816,247	647,550	362,279
Equity	1,820,550	1,986,870	2,184,990	2,393,411	2,613,367	2,859,269	3,168,260
Capital employed	1,893,770	2,452,046	2,940,270	3,446,594	3,429,614	3,506,819	3,530,538
Net debt/Equity	4%	24%	35%	45%	32%	23%	12%
Net debt/Net debt & Equity	4%	19%	25%	30%	24%	18%	10%
NAV	643.5	833.3	999.2	1,171.2	1,165.5	1,191.7	1,199.8
ROAE	12%	12%	11%	11%	11%	11%	12%
ROACE	13%	12%	10%	10%	10%	12%	14%

EV Valuation (Rm)	FY13	FY14	FY15	FY16	FY17	FY18	FY19
Market capitalisation	2,596,387	2,494,038	2,825,304	2,458,920	2,458,920	2,458,920	2,458,920
Core net debt (inc. associates)	73,220	465,176	755,280	1,053,183	816,247	647,550	362,279
Buy-out of minorities	9,490	9,540	19,985	30,380	30,380	30,380	30,380
Pension provisions	0	0	0	0	0	0	0
Less: Peripheral assets	0	0	0	0	0	0	0
EV	**2,679,097**	**2,968,754**	**3,600,569**	**3,542,483**	**3,305,547**	**3,136,850**	**2,851,579**
Net income before minorities	208,790	224,930	235,660	244,841	262,997	295,565	365,276
DDA + exploration	129,682	134,032	138,382	120,029	148,878	168,980	175,724
Other group non-cash items	0	0	0	0	0	0	0
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	27,588	30,071	25,195	46,958	48,874	53,307	50,874
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**366,061**	**389,034**	**399,237**	**411,828**	**460,750**	**517,852**	**591,875**
EV/DACF	**7.3x**	**7.6x**	**9.0x**	**8.6x**	**7.2x**	**6.1x**	**4.8x**
EV/DACF ($)	**7.3x**	**7.6x**	**9.1x**	**8.4x**	**6.9x**	**6.3x**	**5.5x**

Repsol

Investment case

Repsol entered the downturn in crude prices in a relatively advantaged state with an earnings stream skewed to the downstream and low gearing. Even before the crude collapse management had been clear in its desire to use the strong balance sheet to add E&P assets after the sale of the LNG business and the YPF settlement. Investors can't say they were not warned. The Talisman acquisition achieves this objective, though it brings with it considerable baggage around asset quality, but also a resultant higher cashflow neutrality. The gearing of the combined group to the oil price has therefore risen significantly both because of the increased exposure to the upstream but also the nature of that exposure and the balance sheet indebtedness. Our reduced view of longer-term oil prices has a significant impact on Repsol as a result. Clearly this impact can be mitigated to some degree by cost reduction efforts as it is in all peers but with a new asset base there is an increased challenge to Repsol management as a result, beyond its targeted deal synergies. The good news is the more constructive view of European refining is clearly helpful to the domestic downstream business of the company which has become an exceptionally profitable operation. Repsol management will provide the market with more financial guidance and a full scale updated strategy outlook at around the 3Q reporting date. We expect a meaningful shift from growth to value. The challenge for Repsol management will be to provide a case where the incremental earnings/cashflow more than offsets the inevitable valuation multiple contraction.

Financial and operational outlook

2Q 2015 gearing stood at 32%, well up from the 6% at 1Q because of the impact of the Talisman acquisition which was made entirely in cash. We estimate that 2015 cash neutrality is achieved at $129/bbl (excluding the Talisman outlay). We see gearing peaking in 2016 at 36% and cash neutrality falling to $81/bbl in 2017. ROACE peaked in 2005 at 15.6% and we estimate will be 5.4% in 2015, climbing to 6.0% in 2018. We expect capex to fall from a peak of €6.8bn in 2011 to €5.5bn in 2016 and 5-year production growth (2014-2019) of 18.6% driven by the enlarged asset base from Talisman's acquisition with focus on assimilating the Talisman assets and maximising synergies.

Upside scenario

The upside scenario for Repsol sits with the oil price - ~2-3% on net income per $1/bbl in the oil price, double that of legacy Repsol. Further progress on synergies (we believe the €350m is probably still conservative) could provide further upside: doubling the synergies would amount to ~6% on EPS and meaningfully improve the accretion metrics. Valuation upside would mainly come from adept disposals out of the combined asset base reducing the EV quicker than the earnings and cashflow contribution and easing the gearing side.

Downside scenario

The downside scenario is symmetrical on oil price. A de-rating to Repsol's multiple on EV/DACF (concerns over new oil price leverage; higher debt; lower relative growth and higher capital requirements from Talisman's North Sea assets) implies ~15% downside. Continued low oil price may prompt a more aggressive disposal plan than currently envisaged which might then lead to the loss of important EBITDA contribution. A de-rating to a multiple of Eni or Statoil would imply a downside to ~€10/share

Catalysts

5 November 2015	3Q15 results
2H15	Further hybrid issuance
2015-2016	€1bn asset sales
4Q15	New strategy update

Valuation

Our price target of €12/share is set at a pro-forma 2017E EV/DACF of 5.4x vs a sector average of 5.4x – this is just below the larger majors but well above the other second-tier names, which may prove a risk to the valuation (Historically the multiple has been high on growth and downstream exposure at a 3-year average of 6.8x). It implies a 2017E PE of 8.8x vs 11.2x for the sector (boosted by a low depreciation charge versus capex) and a 2015E dividend yield of 7.8% (aided by scrip) vs the sector average of 5.0%.

Repsol Price target: € 12 Upside: 2% Neutral

Share data				
Mkt cap (€ bn)	16.5	% of IBEX 35 Index		3.83%
Mkt cap ($ bn)	18.4	% of Eurofirst 100		0.44%
Price (€)	11.79	% of MSCI Pan-Euro		0.20%
12m high	19.37	Daily trading volume		7.7
12m low	11.79	Free float		62.7%
RIC code (ADR)	REP.MC	Major shareholders	Caixabank	11.5%
Bloomberg code	REP SM		Sacyr	8.7%
ADR ratio	1		Temasek	5.9%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	347	355	570	752	785	818	832
Growth	4%	2%	61%	32%	4%	4%	2%
Ref thru'puts (000 b/d)	674	724	816	818	818	818	818
Growth	1%	7%	13%	0%	0%	0%	0%
Product sales (000 b/d)	754	769	785	800	816	833	849
Growth	2%	2%	2%	2%	2%	2%	2%

Profit & Loss (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	108.74	99.38	55.00	57.50	70.00	75.00	80.00
$/E	1.33	1.33	1.13	1.14	1.14	1.14	1.14
E&P	1,793	1,149	(279)	1,039	2,678	3,418	3,788
LNG	829	269	(46)	70	75	75	75
Downstream	491	1,219	2,497	1,796	1,710	1,570	1,557
Gas Natural	924	0	0	0	0	0	0
Corporate/other	(300)	(216)	(332)	(345)	(300)	(306)	(312)
Adj Operating Income	3,737	2,421	1,840	2,559	4,163	4,757	5,108
Special items	(393)	(1,842)	(324)	0	0	0	0
Rep Operating Income	3,344	579	1,516	2,559	4,163	4,757	5,108
Net interest	(786)	(273)	(68)	(1,103)	(1,165)	(1,136)	(1,148)
Other special items	(1,352)	1,055	22	0	0	0	0
Pretax profit	1,206	1,361	1,469	1,456	2,998	3,621	3,960
Affiliates (post-tax)	123	688	463	443	453	430	433
Tax	(1,096)	(476)	(456)	(584)	(1,295)	(1,595)	(1,753)
Minorities	(38)	39	(35)	(9)	(9)	(10)	(10)
Reported net income	194	1,612	1,442	1,306	2,147	2,447	2,631
Special items	1,629	95	187	0	0	0	0
Adj net income	1,823	1,707	1,629	1,306	2,147	2,447	2,631

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	1,289	1,374	1,394	1,428	1,459	1,489	1,518
EPS	0.15	1.17	1.03	0.91	1.47	1.64	1.73
Adj EPS	1.41	1.24	1.16	0.89	1.45	1.62	1.71
Adj CEPS	2.34	2.44	3.30	3.18	3.82	4.09	4.26
DPS (net)	1.00	2.00	1.00	1.02	1.05	1.08	1.11
EPS/ADR	$0.20	$1.56	$1.17	$1.04	$1.68	$1.87	$1.98
Adj EPS/ADR	$1.88	$1.65	$1.31	$1.02	$1.65	$1.85	$1.95
Adj CEPS/ADR	$3.10	$3.25	$3.73	$3.62	$4.36	$4.66	$4.85
DPS (net)/ADR	$1.33	$2.66	$1.13	$1.16	$1.20	$1.23	$1.27
Pay out ratio (EPS)	71%	161%	86%	114%	72%	67%	65%
Pay out ratio (Adj CEPS)	43%	82%	30%	32%	27%	26%	26%
Tax rate	38%	35%	31%	40%	43%	44%	44%

Cash Flow (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	194	1,612	1,442	1,306	2,147	2,447	2,631
DD&A (inc. exploration)	2,559	1,796	2,875	3,232	3,431	3,646	3,828
Minority adjustment	38	(39)	35	9	9	10	10
Working capital/other	(502)	966	(192)	(190)	(200)	(100)	(100)
Other non-cash items	1,707	(1,152)	(792)	(213)	(233)	(215)	(219)
Net cashflow from ops	3,996	3,183	3,367	4,144	5,153	5,787	6,150
Disposals	683	4,792	1,331	0	0	0	0
Shares	1,014	(82)	1,024	0	0	0	0
Sources	5,693	7,893	5,722	4,144	5,153	5,787	6,150
Capex	(3,621)	(2,606)	(12,978)	(5,015)	(5,135)	(5,312)	(5,438)
Acquisitions	(350)	(1,590)	494	0	0	0	0
Dividends	(528)	(1,712)	(589)	(704)	(734)	(772)	(812)
Share purchases	0	0	1	0	0	0	0
Other	(2,371)	(3,740)	4,388	0	0	0	0
Applications	(6,870)	(9,648)	(8,684)	(5,720)	(5,870)	(6,085)	(6,250)
Cash surplus/(deficit)	(1,177)	(1,755)	(2,961)	(1,576)	(717)	(298)	(99)
FX/other	7,620	2,078	(9,464)	0	(0)	0	(0)
Decrease in net debt	6,443	323	(12,425)	(1,576)	(717)	(298)	(99)

Balance Sheet (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt (prefs as debt)	4,254	3,931	16,356	17,932	18,649	18,947	19,046
Equity	27,920	17,220	19,128	19,686	21,125	22,904	24,871
Capital employed	32,174	21,151	35,485	37,619	39,774	41,851	43,917
Net debt/Net debt & Equity	13%	12%	34%	36%	36%	35%	34%
NAV	21.7	12.5	13.7	13.8	14.5	15.4	16.4
ROAE	8.1%	7.0%	7.1%	6.4%	8.8%	9.2%	9.3%
ROACE	6.5%	6.0%	5.4%	4.1%	5.7%	6.0%	6.1%

EV Valuation (€m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	22,576	24,438	16,476	16,476	16,476	16,476	16,476
Core net debt (inc. associates)	4,254	3,931	16,356	17,932	18,649	18,947	19,046
Buy-out of minorities	380	(383)	100	110	120	130	140
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	(1,985)	(6,860)	(6,860)	(6,860)	(6,860)	(6,860)	(6,860)
EV	25,225	21,126	26,073	27,659	28,386	28,693	28,803
Net income before minorities	232	1,573	1,476	1,314	2,156	2,456	2,641
DD&A + exploration	2,559	1,796	2,875	3,232	3,431	3,646	3,828
Other group non-cash items	58	(899)	(1,109)	(443)	(453)	(430)	(433)
Core associates non-cash items	148	31	12	3	1	1	(0)
Core post-tax interest + pension cost	224	267	471	704	731	712	720
less: peripheral income/cash flow	0	(441)	(453)	(440)	(451)	(430)	(433)
DACF	3,221	2,327	3,273	4,372	5,415	5,955	6,322
EV/DACF	7.8x	9.1x	8.0x	6.3x	5.2x	4.8x	4.6x
EV/DACF $	8.5x	8.8x	7.7x	6.1x	5.0x	4.6x	4.4x

Rosneft

Investment case

Being the world's biggest oil company, Rosneft is facing near-term oil production weakness amid weak oil prices. At the same time the company has to increase oil supplies to China and repay huge debt. While Rosneft enjoys one of the lowest upstream costs, it is obliged to spend USD billions on mandatory domestic refineries upgrades. In terms of the development of big unconventional, deepwater and Arctic oil reserves, we note the current sectorial sanctions imposed by US and EU. Rosneft is changing its production strategy prioritizing production enhancements on the conventional brownfields. Also, Rosneft is strengthening its co-operation with China state-owned oil and gas companies offering minority stakes in the upstream assets. Rosneft plans to double drilling volumes over next two years relying on in-house OFS division and acquired drillers. Rosneft is likely to be the key beneficiary from the new Profit Based Tax regime which the government is to test next year. Rosneft's relatively high financial leverage is one of the key risks for equity investors. We highlight company's upstream capex flexibility and its ability to generate decent free cash flows amid weak oil prices. That said, Rosneft remains active in M&A, which we do not like given leverage and indistinct oil price direction. While we do not question company's cash liquidity in 2015, pre-payments from CNPC and Rosneft's ability to withdraw USD cash deposits from state-owned banks hold the key to Rosneft's cash liquidity in the medium-term. The government is likely to support Rosneft financially in a worst case given the company’s size and its role in the Russian economy. The company intends to maintain a 25% dividend payout.

Financial and operational outlook

We estimate that 2016 cash neutrality is achieved at $47/bbl. However, cash neutrality increases to $84/bbl after scheduled debt repayment. Company's net debt (excluding outstanding pre-payments) stood at $40bn in 2Q15. We see gearing peaked last year at 46%. We expect downstream capex to fall from a peak of $6.4bn in 2013 to $1.1bn in 2020 after expensive refining modernization completes in 2019E. We forecast upstream opex and capex to stay below $5/boe and $7/boe, respectively by 2020. We estimate lower upstream costs and decreasing refining capex should improve FCF allowing Rosneft to accelerate debt repayment – which we think is a priority in the short-medium term. Oil production is likely to decline this year. We conservatively forecast oil production to flattish next year as the company is lagging its aggressive 2-year drilling plan YTD. We project oil production returns to grow in 2017 on the back on new fields launching. We estimate 5-year total hydrocarbon production growth (2014-2019) at 2.5% (0.1% for oil and 10.9% for gas). Our 5-year overall hydrocarbon production growth forecast of 13% is below companies guidance of 20%. We forecast neither new shale oil nor Arctic projects for Rosneft. We also do not expect LNG projects for Rosneft (Sakhalin-1 LNG and Pechora LNG) at this stage.

Upside scenario

$1/bbl higher oil price generates 5% FY16E EPS upside. Despite Rosneft's significant net debt denominated in USD, weaker RUB is also EPS positive. We believe announced potential sales of minority stakes in the upstream assets to Sinopec and ONGC may accelerate development of new upstream projects resulting in earlier production recovery and lower capex for Rosneft. Sharing projects' capex with strategic investors should release cash flows allowing Rosneft to repay debt ahead of schedule. As oil production recovers, gearing normalizes and assuming no new or broader sanctions are imposed historical valuation discount may be liquidated resulting in a price per share of $5.0.

Downside scenario

Longer recovery in the oil price and additional sanctions represent key risks to our Neutral view on the stock. We think Rosneft is also very sensitive to any material acquisition taking place given its history. A 5-year trough EV/EBITDA of 3.7x would give a price per share of $3.3.

Catalysts

2015 Sale of minority stakes in Vankorneft, VSNK, Tyumenneftegas and Taas-Yuryakh
2016 Start-ups: Messoyakha and Suzun fields
2017 Start-ups: Yurubcheno-Tokhomskoye field

Valuation

Our price target of $3.7 (cut from $5.0) is 50/50 based on DCF ($80/bbl long-term oil price, WACC=15% and zero terminal growth rate) and 12-month target EV/EBITDA of 4.0x. We are Neutral on Rosneft.

Rosneft — Price target: $3.7 — Upside: 1% — Neutral

Share data				
Mkt cap ($ bn)	38.9	% of MSCI Russia		3.30%
Mkt cap ($ bn)	38.9	% of MSCI Energy		0.17%
Price (€)	3.7	% of MSCI World		0.02%
12m high	6.4	Daily trading volume (m)		6.63
12m low	2.8	Free float		10.8%
RIC code (ADR)	ROSNq.L	Major shareholders	Rosneftegaz	69.50%
Bloomberg code	ROSN LI		BP	19.75%
ADR Ratio	1			

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	4451	5075	5155	5182	5337	5653	5736
Growth	65%	14%	2%	1%	3%	6%	1%
Ref thru'puts (000 b/d)	1763	1917	1960	1994	2039	2039	2059
Growth	43%	9%	2%	2%	2%	0%	1%
Product sales (000 b/d)	1878	2041	2097	2071	2118	2113	2133
Growth	50%	9%	3%	-1%	2%	0%	1%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	**109.65**	**99.25**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
Rb/$	**31.84**	**38.41**	**60.08**	**62.50**	**57.50**	**52.50**	**50.00**
Adj Operating Income	**17,338**	**16,400**	**10,159**	**13,018**	**18,314**	**18,941**	**21,159**
Net interest	(1,100)	(4,623)	(2,598)	(2,302)	(1,920)	(1,439)	(888)
Other financial	0	0	0	0	0	0	0
Other items	3,401	746	58	(1,745)	(1,745)	(1,745)	(1,745)
Pretax profit	**19,639**	**12,523**	**7,619**	**8,971**	**14,650**	**15,757**	**18,526**
Tax	(2,523)	(3,186)	(1,536)	(1,794)	(2,930)	(3,151)	(3,705)
Minorities	(190)	(71)	0	0	0	0	0
Rep Net Income	**14,669**	**9,578**	**5,965**	**5,432**	**9,975**	**10,861**	**13,076**
Adj Net Income	**16,927**	**9,266**	**6,083**	**7,177**	**11,720**	**12,606**	**14,821**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	10,304.0	10,598.0	10,598.0	10,598.0	10,598.0	10,598.0	10,598.0
EPS	1.42	0.90	0.56	0.51	0.94	1.02	1.23
Adj EPS	1.64	0.87	0.57	0.68	1.11	1.19	1.40
Adj CEPS	3.70	3.99	2.50	2.13	2.16	2.12	1.93
DPS (net)	0.40	0.15	0.14	0.17	0.28	0.30	0.35
EPS/ADR	1.42	0.90	0.56	0.51	0.94	1.02	1.23
Adj EPS/ADR	1.42	0.90	0.56	0.51	0.94	1.02	1.23
Adj CEPS/ADR	3.70	3.99	2.50	2.13	2.16	2.12	1.93
DPS (net)/ADR	0.40	0.15	0.14	0.17	0.28	0.30	0.35
Pay out ratio (EPS)	25%	17%	25%	25%	25%	25%	25%
Pay out ratio (Adj CEPS)	11%	4%	6%	8%	13%	14%	18%
Tax rate	13%	25%	20%	20%	20%	20%	20%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	14,669	9,578	5,965	5,432	9,975	10,861	13,076
DD&A	12,223	12,155	9,214	10,505	11,411	12,352	13,265
Exploration	530	495	297	406	466	514	463
Minorities	190	71	0	0	0	0	0
Other non-cash items	10,986	20,346	9,588	7,024	2,935	(434)	(5,403)
Working capital	(498)	(312)	1,433	(742)	(1,939)	(871)	(995)
Net cashflow from ops	**38,100**	**42,333**	**26,496**	**22,626**	**22,848**	**22,423**	**20,406**
Disposals	0	0	0	0	0	0	0
Shares Issued	0	0	0	0	0	0	0
Sources	**38,100**	**42,333**	**26,496**	**22,626**	**22,848**	**22,423**	**20,406**
Capex	(17,966)	(14,606)	(10,203)	(12,258)	(13,638)	(13,254)	(12,820)
Acquisitions	(44,193)	0	0	0	0	0	0
Dividends	(2,670)	(3,541)	(1,567)	(1,521)	(1,794)	(2,930)	(3,151)
Other	(6,250)	(17,183)	(555)	5,292	0	0	0
Applications	**(71,080)**	**(35,329)**	**(12,325)**	**(8,487)**	**(15,432)**	**(16,184)**	**(15,971)**
Cash surplus/(deficit)	(32,980)	7,003	14,171	14,139	7,417	6,239	4,435
FX/other	(23,122)	(1,408)	(6,197)	(1,023)	1,360	3,740	8,026
Decrease in net debt	**(56,102)**	**5,596**	**7,973**	**13,116**	**8,777**	**9,979**	**12,461**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	78,063	72,467	64,494	51,378	42,601	32,621	20,160
Equity	95,509	51,049	57,497	64,898	76,568	87,989	101,403
Capital employed	173,572	123,516	121,991	116,275	119,169	120,610	121,563
Net debt/Equity	82%	142%	112%	79%	56%	37%	20%
Net debt/Net debt & Equity	45%	59%	53%	44%	36%	27%	17%
NAV	16.8	11.7	11.5	11.0	11.2	11.4	11.5
ROAE	20%	13%	11%	12%	17%	15%	16%
ROACE	13%	9%	7%	8%	11%	11%	13%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	66,920	65,378	38,885	38,885	38,885	38,885	38,885
Core net debt (inc. associates)	50,012	75,265	68,480	57,936	46,989	37,611	26,391
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Less: Peripheral assets	0	0	0	0	0	0	0
EV	**116,932**	**140,643**	**107,365**	**96,820**	**85,874**	**76,496**	**65,275**
Net income before minorities	14,858	9,650	5,965	5,432	9,975	10,861	13,076
DDA + exploration	12,753	12,649	9,511	10,910	11,877	12,867	13,728
Other group non-cash items	10,488	20,034	11,021	6,283	995	(434)	(5,403)
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	958	3,446	2,075	1,842	1,536	1,151	711
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**39,058**	**45,779**	**28,571**	**24,467**	**24,384**	**24,445**	**22,112**
EV/DACF	**3.0x**	**2.5x**	**3.8x**	**4.0x**	**3.5x**	**3.1x**	**3.0x**

Royal Dutch Shell

Investment case

Shell shares benefited in 2014 from being the perceived sector 'safe haven'. We were disappointed by the somewhat vague response to the challenges of the low oil price environment that accompanied 4Q results. However 2Q saw management set out a much more relevant narrative around re-setting the business, accompanied by more vigorous championing of the merits of the BG deal). Reinstatement of the scrip dividend was an acknowledgement of the likely shortfall in cash and the fact that the dividend, an important feature of the investment case, wasn't as robust as the market might have hoped. However, BG provides valuable free cashflow to support the payout, as will the measures taken at 2Q around Shell stand-alone capex. We see the BG deal as in part an acknowledgement of the challenge posed to Shell's portfolio by lower oil prices, acquiring outstanding E&P assets in Brazil and a complementary LNG portfolio, but doing so at close to a full price (though not over-paying). The shift down the cost curve and the acquisition of medium term cashflow addresses the main issues we have had in the investment case and if the deal can be used as a springboard to transform Shell's upstream and alter capital allocation then it could be very exciting indeed. Having had a somewhat sticky patch, the past 1-2 years have seen the Shell Downstream business now begin to perform well with the good leverage to the operating conditions, targeted investment, especially in the US to take advantage of changing market dynamics and a self-help programme designed to secure $10bn of CFFO (and thereby cover around half the dividend).

Financial and operational outlook

2Q 2015 gearing stood at 12.7%. We estimate that 2015 cash neutrality is achieved at $75/bbl (after recent capex cuts and employing the scrip) and between $70-$75 by 2018 with a full cash dividend). We see gearing (pre-BG) now at a peak with interim cash shortfall offset by disposals. We expect capital investment to fall from a peak of $46bn in 2013 to $30bn in 2015 and be flat on a stand-alone basis thereafter, although we see further downside with the acquisition of BG and more capex optimisation. We estimate the 5-year standalone production growth (2014-2019) at 1%.

Upside scenario

We believe upside in the shares comes with the improvement of capital allocation and free cashflow generation which is also linked with the BG deal. At a lower oil price BG is only a small accretion on EV/DACF but should facilitate attractive free cashflow generation. The shares have historically traded on lower dividend yields than is currently the case with <4% common. A yield of 4%, which ultimately does not seem implausible to us (AA credit), would also imply >50% upside (~£30/share).

Downside scenario

We see a material share price downside scenario that isn't macro related as low probability given the current nominal dividend yield and management's stated intention to maintain the payout. A de-rating on EV/DACF to a multiple in line with peer Total's recent history would imply a share price of ~1600p.

Catalysts

29 Oct 2015	3Q15 results
Summer '15	Restart Arctic drilling
2 Sept 2015	EU antitrust decision
3 Sept 2015	ACCC decision published (final decision or Statement of Issues)
2015/16	FIDs: Vito, Libra, Bonga SW
2015/16	Start-ups: Gbaran Ubie 2, Gorgon, Stones
Early 2016	Expected conclusion of BG transaction

Valuation

Our Buy rating is set with a 2,050p PT is based on 5.6x 2017E EV/DACF ($70/bbl) in base case or 5.7x in the BG scenario vs Shell stand-alone at 5.7x and sector at 5.4x.. This equates to a P/E of 9.8x and dividend yield of 8.9% (3-year average multiples of 9.7x and 5.0%, respectively).

Royal Dutch Shell — Price target: 2,050p — Upside: 28% — Buy

Share data				
Mkt cap (£ bn)	103	% of FTSE 100		6.83%
Mkt cap ($ bn)	156	% of FTSE All Share		5.44%
Price (p)	1,605	% of MSCI Pan-Euro		2.09%
12m high	2450	Daily trading volume		6.1
12m low	1575	Free float		100%
RIC code (ADR)	RDSa.L	Major shareholders	Blackrock	6.8%
Bloomberg code	RDSA LN		Franklin Templeton	3.3%
ADR ratio	2		Legal & General IM	3.1%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	3199	3080	2963	3015	3076	3115	3176
Growth	-2%	-4%	-4%	2%	2%	1%	2%
Ref thru'puts (000 b/d)	3199	3080	2963	3015	3076	3115	3176
Growth	13%	-4%	-4%	2%	2%	1%	2%
Product sales (000 b/d)	6163	6365	6445	6527	6611	6695	6782
Growth	-3%	3%	1%	1%	1%	1%	1%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
$/£	**1.56**	**1.65**	**1.55**	**1.58**	**1.58**	**1.58**	**1.58**
Upstream	15,117	16,505	2,916	5,042	10,325	12,695	15,138
Downstream	4,466	6,265	10,993	9,556	9,485	9,240	9,316
Other	0	0	0	0	0	0	0
Earnings from operations (Adj)	**19,583**	**22,770**	**13,910**	**14,598**	**19,811**	**21,936**	**24,454**
Corporate (ex currency)	262	110	278	55	(81)	(250)	(383)
Minorities	(164)	(55)	(397)	(384)	(383)	(381)	(382)
Currency	(189)	(263)	(250)	0	0	0	0
CC Net Income (Adj)	**19,492**	**22,562**	**13,541**	**14,269**	**19,346**	**21,304**	**23,689**
Special items	(2,747)	(3,521)	1,041	0	0	0	0
CC Net income (Rep)	**16,745**	**19,041**	**14,582**	**14,269**	**19,346**	**21,304**	**23,689**
Stock profit/(loss)	(374)	(4,167)	(1,806)	664	700	350	350
HC Net Income (Rep)	**16,371**	**14,874**	**12,776**	**14,933**	**20,046**	**21,654**	**24,039**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
B share							
No. shares (avg)	2,516	2,423	2,460	2,429	2,429	2,429	2,424
Rep EPS (HC) GBp	170.9	182.8	147.0	139.5	187.2	206.1	229.8
Adj EPS (CC) GBp	198.9	215.9	136.2	139.5	187.2	206.1	229.8
Adj CEPS GBp	380.9	374.2	308.7	331.6	386.3	410.2	440.7
DPS (GBp)	115.07	114.10	121.25	118.99	118.99	121.37	123.79
Adj EPS/ADR	$6.22	$7.12	$4.22	$4.41	$5.92	$6.51	$7.26
Adj CEPS/ADR	$11.91	$12.33	$9.57	$10.48	$12.21	$12.96	$13.93
DPS/ADR	$3.60	$3.76	$3.76	$3.76	$3.76	$3.84	$3.91
A share							
No. shares (avg)	3,778	3,888	3,961	4,044	4,112	4,112	4,101
RD Rep EPS	€ 2.01	€ 2.27	€ 2.02	€ 1.93	€ 2.59	€ 2.86	€ 3.18
RD Adj EPS	€ 2.34	€ 2.68	€ 1.87	€ 1.93	€ 2.59	€ 2.86	€ 3.18
RD Adj CEPS	€ 4.49	€ 4.64	€ 4.24	€ 4.60	€ 5.35	€ 5.69	€ 6.11
DPS	€ 1.36	€ 1.41	€ 1.67	€ 1.65	€ 1.65	€ 1.68	€ 1.72
Pay out ratio (EPS)	58%	53%	89%	85%	64%	59%	54%
Pay out ratio (Adj CEPS)	30%	30%	39%	36%	31%	30%	28%
Tax rate	66%	55%	44%	44%	44%	44%	44%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net income	19,492	22,562	13,541	14,269	19,346	21,304	23,689
DD&A	18,918	24,499	18,435	18,182	19,074	19,937	20,600
Exploration expensed	2,772	1,980	1,119	700	600	600	600
Minority adjustments	164	55	397	384	383	381	382
Working capital / other	(958)	(3,063)	(2,232)	(1,201)	(1,136)	(73)	(35)
Net cash flow from ops	**40,388**	**46,033**	**31,260**	**32,334**	**38,268**	**42,150**	**45,236**
Disposals	1,537	13,623	3,302	0	0	0	0
Issuance of minority shares	0	0	0	0	0	0	0
Sources	**41,925**	**59,656**	**34,561**	**32,334**	**38,268**	**42,150**	**45,236**
Capex	(34,683)	(33,280)	(27,937)	(27,740)	(29,333)	(29,050)	(29,792)
Acquisitions	(8,275)	0	0	0	0	0	0
Dividends	(7,391)	(9,560)	(9,087)	(7,613)	(12,597)	(12,843)	(13,063)
Share purchases	(5,565)	(3,096)	(404)	5	6	6	(994)
Applications	**(55,914)**	**(45,936)**	**(37,428)**	**(35,348)**	**(41,924)**	**(41,887)**	**(43,848)**
Cash surplus/(deficit)	(13,989)	13,720	(2,866)	(3,014)	(3,657)	263	1,388
FX/other	(1,673)	(2,787)	626	(0)	0	0	0
Decrease in net debt	**(15,662)**	**10,933**	**(2,240)**	**(3,014)**	**(3,657)**	**263**	**1,388**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	34,866	23,933	26,173	29,187	32,844	32,581	31,193
Total debt	(44,562)	45,540	53,154	56,168	59,825	59,562	58,174
Equity	181,148	172,964	180,396	188,760	197,280	207,188	218,290
Capital employed	216,014	196,897	206,569	217,947	230,124	239,770	249,483
Net debt/Equity	19%	14%	15%	15%	17%	16%	14%
Net debt/Net debt & Equity	16%	12%	13%	13%	14%	14%	13%
Book Value (p)	1,840	1,663	1,812	1,846	1,909	2,005	2,117
ROAE	10.9%	12.5%	7.7%	7.8%	10.1%	10.7%	11.3%
ROACE	9.2%	10.9%	6.7%	6.7%	8.6%	9.1%	9.7%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	215,048	243,119	156,131	156,131	156,131	156,131	156,131
Core net debt (inc. associates)	48,924	49,251	44,281	47,392	51,114	53,204	52,779
Buy-out of minorities	1,640	550	3,965	3,839	3,833	3,811	3,818
Pension provisions	170	170	170	170	170	170	170
Peripheral assets	0	0	0	0	0	0	0
EV	**265,781**	**293,090**	**204,547**	**207,532**	**211,247**	**213,316**	**212,898**
Net income before minorities	19,656	22,617	13,938	14,653	19,730	21,685	24,071
DD&A + exploration	26,787	28,723	21,799	20,782	21,274	22,185	22,898
Other group non-cash items	418	(2,536)	75	75	75	75	75
Core associates non-cash items	2,769	2,525	2,603	2,654	2,706	2,759	2,812
Core post-tax interest + pension cost	915	1,122	870	874	963	1,073	1,159
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**50,545**	**52,451**	**39,285**	**39,038**	**44,747**	**47,777**	**51,015**
EV/DACF	**5.3x**	**5.6x**	**5.2x**	**5.3x**	**4.7x**	**4.5x**	**4.2x**

Sasol

Investment case

With no significant production growth anticipated until the new US ethane cracker starts up, which will be earliest 2018, we believe the biggest drivers for the stock will be oil price and ZAR/US$ exchange rate. With the oil cost curve falling and a slow recovery in oil prices expected, this does not bode well for the investment case of the stock. Further compounding this is the fact that the share is discounting an oil price 30% higher than spot prices. Offsetting this, though, is a continuously depreciating rand, to which Sasol's earnings are heavily geared. Having committed on a very ambitious capital spend in the next few years, this low oil price environment should ultimately translate into the balance sheet coming under pressure. This, together with the fact that the bulk of the capex is to be spent on one project only, increases the risk profile of the company. This should drive a de-rating in the stock, but in actual fact the stock has re-rated, indicating still further downside from current share prices, in our view.

Financial and operational outlook

We estimate that Sasol's gearing is currently around 4%. Capex spend, though, is increasing steeply as Sasol progresses the ethane cracker project in the US. As such, the company is planning to spend R65 billion in FY16 and a further R60 billion in FY17. Coupled with the low oil price environment, Sasol will be FCF negative in the next few years and this should see gearing peak at just under 40% by 2018. Sasol's production profile is fairly flat, with a few small incremental projects coming online in the next couple of years. It is only in 2018 where there is potentially a step-up in production as the US ethane cracker comes online.

Upside scenario

For the upside scenario, we consider the rand depreciating to R14/US$, and oil rising to US$70/bbl for FY2016 and US$85/bbl for FY2017 and increasing by US inflation thereafter, which we believe is likely if supply is disrupted and a risk premium is again included in the oil price. Our upside scenario yields a fair value of R520 for Sasol.

Downside scenario

We consider a Brent oil price of US$40/bbl and the rand getting back to R11/US$, for our downside scenario from FY2016 to FY2017. Our fair value for Sasol in this downside scenario is R330.

Catalysts

2016	SA government's finalisation of carbon tax
2016	Potential finalisation of SA Competition Commission case against Sasol for excessive polymer pricing
2016	Delivery of restrcucturing and cost savings targets
2018	Completion of US ethane cracker

Valuation

Our price target of R400 is based on our one-year forward SOTP DCF. This implies a 1.8% FY16E dividend yield. Based on consensus, Sasol is trading at a 1-year forward PE of 11.6x, above its historical average of 9.6x. We have a Sell rating on Sasol.

Note: Sasol forecasts and valuation not updated for new UBS oil price forecasts.

Sasol   Price target: R40000   Upside: -6%   Sell

Share data			
Mkt cap (ZAR bn)	258.9	FSTE JSE Top 40	4.17%
Mkt cap ($ bn)	18.7	DJ Emerging Oil and Gas Titans	5.26%
Price (ZAR)	425	MSCI Energy	0.68%
12m high	643	Daily trading volume (m)	1.94
12m low	365	Free float	92%
RIC code (ADR)	SOLJ.J	Major shareholders GEPF	14.4%
Bloomberg code	SOL SJ	IDC	8.2%
ADR ratio	1	Allan Gray	7.7%

Operating	**2012**	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Production (000 boe/d)	279	281	300	304	310	316	324	334
Growth		1%	7%	2%	2%	2%	2%	3%
Ref thru'puts (000 b/d)	226	219	235	236	239	238	237	238
Growth		-3%	7%	1%	1%	0%	0%	0%
Product sales (000 b/d)	266	266	283	286	292	299	306	316
Growth		0%	7%	1%	2%	2%	3%	3%

Profit & Loss (ZAR m)	**2012**	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Brent Crude $/bbl		**108.74**	**99.38**	**61.49**	**70.00**	**80.00**	**90.00**	**90.00**
ZAR/$		**8.85**	**10.37**	**11.51**	**11.80**	**12.00**	**12.00**	**11.50**
E&P		4,402	958	5,906	5,975	9,622	12,548	14,217
R&M		32,297	33,525	17,676	7,488	13,261	19,297	18,126
Chemicals		1,554	5,429	7,464	7,453	14,070	14,518	25,627
Other		7,970	8,822	4,748	(5,402)	(5,679)	(6,348)	(6,862)
Adj Operating Income		**46,223**	**48,734**	**35,793**	**15,514**	**31,274**	**40,015**	**51,108**
Net interest		(1,294)	(705)	(716)	(2,315)	(4,090)	(4,850)	(5,040)
Other financial		445	4,144	3,169	3,288	4,087	3,740	3,561
Pretax profit		**45,374**	**52,173**	**38,246**	**16,487**	**31,271**	**38,904**	**49,630**
Tax		(12,597)	(14,696)	(11,566)	(3,969)	(8,025)	(10,339)	(13,501)
Minorities		(904)	(837)	(1,003)	(299)	(531)	(717)	(463)
Other		0	0	0	0	0	0	0
Rep Net Income		**31,873**	**36,640**	**25,677**	**12,218**	**22,715**	**27,848**	**35,666**
Adj Net Income		**31,873**	**36,640**	**25,677**	**12,218**	**22,715**	**27,848**	**35,666**

Per Share	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
No. shares (avg)	605.7	609.0	610.0	610.0	610.0	610.0	607.7
EPS E	52.63	60.16	42.09	20.03	37.24	45.65	58.47
Adj EPS E	52.63	60.16	42.09	20.03	37.24	45.65	58.47
Adj CEPS E	72.49	82.35	75.38	42.75	59.98	69.04	82.90
DPS (net) E	19.00	21.50	15.10	7.20	13.30	16.40	17.50
EPS/ADR	$5.94	$5.81	$3.73	$1.69	$3.10	$3.80	$5.09
Adj EPS/ADR	$5.94	$5.81	$3.73	$1.69	$3.10	$3.80	$5.09
Adj CEPS/ADR	$8.20	$7.94	$6.55	$3.62	$5.00	$5.75	$7.21
DPS (net)/ADR	$2.15	$2.07	$1.31	$0.61	$1.11	$1.37	$1.52
Pay out ratio (EPS)	36%	36%	36%	36%	36%	36%	30%
Pay out ratio (Adj CEPS)	26%	26%	20%	17%	22%	24%	21%
Tax rate	28%	28%	30%	24%	26%	27%	27%

Cash Flow (ZAR m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net Income	31,873	36,640	25,677	12,218	22,715	27,848	35,666
DD&A	12,030	13,516	20,308	13,860	13,872	14,269	14,907
Exploration	469	469	346	340	335	328	256
Minority adjustment	904	837	1,003	299	531	717	463
Working capital/other	5,331	7,067	1,406	(57)	(1,075)	153	611
Net cashflow from ops	**50,607**	**58,529**	**48,739**	**26,662**	**36,379**	**43,315**	**51,903**
Disposals	554	185	706	0	0	0	0
Shares issued	727	373	74	0	0	0	0
Sources	**51,888**	**59,087**	**49,519**	**26,662**	**36,379**	**43,315**	**51,903**
Capex	(32,288)	(38,779)	(48,001)	(61,949)	(45,949)	(33,664)	(27,141)
Acquisitions	0	0	0	0	0	0	0
Dividends	(11,108)	(13,617)	(13,226)	(6,502)	(6,077)	(9,381)	(10,856)
Other	1,167	1,025	1,811	0	0	0	0
Applications	**(42,229)**	**(51,371)**	**(59,416)**	**(68,451)**	**(52,026)**	**(43,045)**	**(37,997)**
Cash surplus/(deficit)	9,659	7,716	(9,897)	(41,789)	(15,647)	270	13,905
FX/other	(2,150)	(2,745)	(2,554)	330	188	0	(4,748)
Decrease in net debt	**5,623**	**3,481**	**(13,071)**	**(42,099)**	**(16,446)**	**(903)**	**8,303**

Balance Sheet (ZAR m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net debt	(4,976)	(8,457)	4,614	46,713	63,159	64,062	55,759
Equity	149,625	170,977	185,408	191,635	208,779	227,675	248,014
Capital employed	144,649	162,520	190,023	238,348	271,937	291,737	303,773
Net debt/Equity	-3%	-5%	2%	24%	30%	28%	22%
Net debt/Net debt & Equity	-3%	-5%	2%	19%	23%	22%	18%
NAV	247.0	280.7	303.9	314.1	342.2	373.2	408.1
ROAE	23.2%	22.9%	14.4%	6.5%	11.3%	12.8%	15.0%
ROACE	33.7%	33.6%	21.6%	8.6%	13.6%	15.3%	18.1%

EV Valuation (ZAR m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Market capitalisation	230,769	258,941	258,941	258,941	258,941	258,941	258,941
Core net debt (inc. associates)	(655)	(7,274)	(8,941)	25,663	54,936	63,610	63,610
Buy-out of minorities	2,713	2,894	3,174	3,410	4,152	4,251	4,520
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	13,992	13,992	13,992	13,992
EV	**232,828**	**254,561**	**253,174**	**302,007**	**332,021**	**340,794**	**341,064**
Net income before minorities	32,777	37,477	26,680	12,518	23,246	28,565	36,128
DD&A + exploration	12,499	13,985	20,653	14,201	14,207	14,597	15,163
Other group non-cash items	8,913	12,402	83	(121)	(176)	(226)	(270)
Core associates non-cash items	600	1,896	1,930	1,930	1,930	1,930	1,930
Core post-tax interest	1,441	1,386	1,339	2,333	3,355	3,924	4,032
less: peripheral income/cash	0	0	0	0	0	0	0
DACF	**56,230**	**67,146**	**50,685**	**30,860**	**42,562**	**48,790**	**56,983**
EV/DACF	**4.1x**	**3.8x**	**5.0x**	**9.8x**	**7.8x**	**7.0x**	**6.0x**
EV/DACF ($)	**4.1x**	**2.8x**	**4.2x**	**8.3x**	**6.8x**	**6.1x**	**4.9x**

Sinopec

Investment case

We maintain our view that stable oil prices and lower inflation in China set a good policy tone for the energy sector. Against this backdrop we believe Sinopec will have relatively more stable downstream operations (refining, chemical and marketing) compared to the past few years. We believe Sinopec's business has undergone a transformation in recent years. Unlike at the time of global financial crisis valuation lows, today refined product price reform has long since become a reality, the outlook for petrochemicals is strong, non-fuel sales have emerged as an exciting growth opportunity, Sinopec has emerged with very large natural gas reserves potential, the balance sheet is stronger, dividend payout ratios higher, and corporate governance and transparency significantly better. The oil price outlook is uncertain, but we believe this is factored into the share price.

Financial and operational outlook

Sinopec has several key operational drivers including upstream natural gas, expanding refining margin on Euro 4 and 5 upgrades, non-fuel sales growth in marketing, and petrochemical upcycle. Sinopec had target 25% gas production growth at the start of this year although we think weak gas demand will limit that growth to no more than 11%. Meanwhile we expect oil production to decline by 4-5% on weak oil prices and a 15% cut to upstream capex. We expect the company's refining margin to grow on Euro-4 diesel upgrade and inventory gains while we expect the marketing segment margin to be overall stable. We expect non-fuel sales in the marketing division, however, to grow by 50% each year in 2015 and 2016. Finally, following weak global oil prices and potential delay of Chinese capacity, we expect a chemical upcycle in the coming years, with the best operating performance since 2011. Sinopec is also coming off the back of a large capex cycle. With capex coming down, we see the company's cash flow cover of dividend as adequate even under our newer low oil price outlook.

Upside scenario

If long-term Brent oil price expectations were raised to US$90/bbl (versus US$80/bbl), the chemical business reached peak cycle conditions, and refined product demand grew a faster than expected 6% in 2016, these would raise our NAV by 7% to HK10.7/sh.

Downside scenario

If long-term Brent price expectations fell to reflect the futures strip (long-term US$65-70/bbl), it would lower our NAV to HK$8.6/sh (14% below our base-case NAV). If the lower oil price scenario was driven by a weak Chinese economy as opposed to global oil oversupply, and was therefore accompanied by a slower than expected GDP growth in China with trough chemical segment earnings and zero refined product demand growth, this would lower our NAV by 24% to HK$7.6/sh.

Catalysts

We believe the following are potential positive and negative catalysts for Sinopec in the next 12 months: 1) after decline in Q315 we expect YoY earnings growth in Q415 and Q116; 2) China gas price cuts by Sep/Oct; 3) continued visibility on Sinopec's upstream gas development, including progress on the Fuling shale gas project; 4) further group restructuring announcements; 5) continued visibility on the upgrade of the retail marketing business; 6) successful roll-out of Euro 4 diesel and Euro 5 gasoline and diesel, coupled with premium pricing and margins; and 7) better-than-expected chemical segment earnings recovery.

Valuation

Our HK$8.0/sh price target is based on a 20% discount to our NAV estimate of HK$10.0/sh (US$80/bbl Brent and 10% WACC). We value downstream business segments at 6-10x 2016E EV/EBITDA (in line with regional and global peers).

Sinopec   Price target: HK$8.0   Upside: 66%   Buy

Share data				
Mkt cap (Rmb bn)	693.7	% of MSCI EM		0.54%
Mkt cap ($ bn)	89.5	% of MSCI EMF + EAFE		0.11%
Price (HK$)	4.8	Daily trading volume (m)		127.1
12m high	8.18	Free float (H-share)		94%
12m low	4.81	Major shareholders	Sinopec Group/China	70.8%
RIC code (ADR)	0386.HK		GIC	1.4%
Bloomberg code	386 HK		Blackrock	1.2%
ADR ratio	1			

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	1,213	1,315	1,305	1,359	1,439	1,530	1,565
Growth	3%	8%	-1%	4%	6%	6%	2%
Ref thru'puts (000 b/d)	4,377	4,577	4,777	4,977	5,177	5,377	5,592
Growth	3%	5%	4%	4%	4%	4%	4%
Product sales (000 b/d)	3,227	4,064	4,308	4,566	4,840	5,130	5,336
Growth	-20%	26%	6%	6%	6%	6%	4%

Profit & Loss (Rmb m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI Crude $/bbl	**98.02**	**92.89**	**49.00**	**52.50**	**65.00**	**70.00**	**75.00**
Rb/$	**6.15**	**6.25**	**6.40**	**6.80**	**6.80**	**6.80**	**6.80**
E&P Operating Profit	54,793	47,057	(3,743)	(1,562)	22,825	32,540	41,104
R&M Operating Profit	43,742	27,495	55,848	65,617	73,001	82,605	86,350
Chems Operating Profit	868	(2,181)	17,948	17,678	16,185	16,670	17,171
Corporate Operating Profit	(2,618)	1,116	(1,500)	(1,500)	(1,500)	(1,500)	(1,500)
Adj Operating Profit	**96,785**	**73,487**	**68,553**	**80,233**	**110,511**	**130,316**	**143,125**
Interest Expense	(10,602)	(11,218)	(9,910)	(7,966)	(8,039)	(8,231)	(8,523)
Interest Income	1,568	1,779	1,800	1,800	1,800	1,800	1,800
Other Income & Associates	2,513	6,246	4,181	4,447	4,538	4,631	4,636
Other Item	0	0	0	0	0	0	0
Pretax profit	**90,264**	**70,294**	**64,623**	**78,514**	**108,810**	**128,516**	**141,038**
Tax	(24,763)	(17,571)	(16,646)	(20,414)	(28,291)	(33,414)	(36,670)
Minorities	(4,157)	(1,467)	(9,748)	(11,453)	(13,751)	(15,970)	(17,242)
Adj Net Income	**61,344**	**51,256**	**38,229**	**46,647**	**66,769**	**79,132**	**87,126**
Special items	4,788	(4,790)	(1,600)	(1,000)	0	0	0
Rep Net Income	**66,132**	**46,466**	**36,629**	**45,647**	**66,769**	**79,132**	**87,126**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	121,859	122,111	122,111	122,111	122,111	122,111	122,111
EPS	0.54	0.38	0.30	0.37	0.55	0.65	0.71
Adj EPS	0.50	0.42	0.31	0.38	0.55	0.65	0.71
Adj CEPS	1.21	1.12	1.06	1.18	1.40	1.55	1.64
DPS (net)	0.24	0.20	0.15	0.18	0.26	0.31	0.34
Adj EPS/ADR	$0.08	$0.07	$0.05	$0.06	$0.08	$0.10	$0.10
Adj CEPS/ADR	$0.20	$0.18	$0.17	$0.17	$0.21	$0.23	$0.24
DPS (net)/ADR	$0.04	$0.03	$0.02	$0.03	$0.04	$0.05	$0.05
Pay out ratio (EPS)	48%	48%	48%	48%	48%	48%	48%
Pay out ratio (Adj CEPS)	20%	18%	14%	15%	19%	20%	21%
Tax rate	27%	25%	26%	26%	26%	26%	26%

Cash Flow (Rmb m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	68,261	52,544	46,977	57,100	80,519	95,102	104,368
DD&A	81,265	90,097	92,356	98,564	104,184	109,571	113,474
Exploration	12,573	10,969	11,586	13,070	14,262	15,619	16,451
Other non-cash items	0	0	0	0	0	0	0
Working capital	(14,475)	21,819	17,543	(7,982)	(12,833)	(9,634)	(8,638)
Net cashflow from ops	**147,624**	**175,429**	**168,463**	**160,752**	**186,133**	**210,657**	**225,654**
Disposals	0	0	0	0	0	0	0
Shares Issued	0	0	0	0	0	0	0
Sources	**147,624**	**175,429**	**168,463**	**160,752**	**186,133**	**210,657**	**225,654**
Capex	(185,126)	(154,640)	(135,900)	(128,202)	(139,509)	(145,408)	(157,455)
Acquisitions	0	0	0	0	0	0	0
Dividends	(28,298)	(28,031)	(21,104)	(18,835)	(24,663)	(32,497)	(37,378)
Other	18,675	(27,809)	114,972	(6,035)	(24,000)	(33,511)	(35,533)
Applications	**(194,749)**	**(210,480)**	**(42,032)**	**(153,072)**	**(188,173)**	**(211,416)**	**(230,365)**
Cash surplus/(deficit)	(47,125)	(35,051)	126,431	7,680	(2,040)	(758)	(4,711)
FX/other	0	0	0	0	0	0	0
Decrease in net debt	**(47,125)**	**(35,051)**	**126,431**	**7,680**	**(2,040)**	**(758)**	**(4,711)**

Balance Sheet (Rmb m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	284,359	319,410	192,979	185,298	187,339	188,097	192,808
Total debt	299,460	329,510	206,176	202,324	209,922	212,159	224,910
Equity	570,346	594,483	658,175	684,987	727,092	773,727	823,476
Capital employed	854,705	913,893	851,153	870,285	914,431	961,824	1,016,284
Net debt/Equity	50%	54%	29%	27%	26%	24%	23%
Net debt/Net debt & Equity	33%	35%	23%	21%	20%	20%	19%
NAV	7.0	7.5	7.0	7.1	7.5	7.9	8.3
ROAE	11%	9%	6%	7%	9%	11%	11%
ROACE	15%	13%	13%	6%	8%	9%	10%

EV Valuation (Rmb m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	657,811	693,668	693,668	693,668	693,668	693,668	693,668
Core net debt (inc. associates)	260,797	301,885	256,194	189,138	186,319	187,718	190,452
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Less: Peripheral assets	0	0	0	0	0	0	0
EV	**918,608**	**995,552**	**949,862**	**882,806**	**879,986**	**881,385**	**884,120**
Net income before minorities	68,261	52,544	46,977	57,100	80,519	95,102	104,368
DDA + exploration	93,838	101,066	103,943	111,634	118,446	125,190	129,925
Other group non-cash items	0	0	0	0	0	0	0
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	6,610	6,914	6,002	4,563	4,617	4,759	4,975
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**168,709**	**160,524**	**156,921**	**173,297**	**203,583**	**225,050**	**239,267**
EV/DACF	**5.4x**	**6.2x**	**6.1x**	**5.1x**	**4.3x**	**3.9x**	**3.7x**
EV/DACF $	**4.6x**	**5.7x**	**5.3x**	**4.6x**	**3.9x**	**3.5x**	**3.3x**

Southwestern Energy

Investment Case

Traditionally focused in the Fayetteville Shale, SWN now boasts >700,000 net acres in the Marcellus where increasing drilling activities and encouraging well results are driving all of its volume growth, and recent horizontal well performance suggests upside to its unbooked resources in the play. With its recent acreage acquisition in the southern Marcellus (440,000 producing acres) and continued momentum in NE Marcellus (312,000 acres), SWN should deliver robust volume growth of 28% in 2015 & ~11% per annum thereafter. And while we forecast SWN to generate above average debt-adjusted growth from 2015-19, it trades at a ~2 turn discount to gassy peers on 2016E EV/EBITDX. Our $22 price target assumes 6.0x normalized 2016E EBITDX.

Upside Scenario

Our upside scenario assumes SWN is acquired, as we believe its core asset positions in the Marcellus and Fayetteville Shale and low-cost structure means it could benefit from any sector consolidation targeted at gas exposure. With take-outs typically done at NAV, we note that our NAV under the UBS Price Deck is ~$23/share, implying a ~50% upside from current levels. We estimate a $0.50/MMBtu increase in our normalized gas price would boost this valuation to ~$34/share.

Downside Scenario

Our downside case assumes a slower than anticipated pace of development of the Marcellus Shale fails to offset expected flattish production from the Fayetteville, reducing SWN's long-production growth to a pedestrian mid-single digit range. Under this scenario, we could envision SWN's 2016E EV/EBITDX multiple eroding to 6.5x under our price deck, implying downside to ~$11/share.

Catalysts

2015: NE Marcellus resource potential, and additional well results/details from new venture plays, particularly the Sand Wash.

2015: More disclosure on improved well performance in the SW Marcellus development

Financial and Operational Outlook

SWN does not anticipate materially outspending cash flow next year, while it has noted a 2016 capex budget of $1 billion (or ~53% of its 2015 budget) would deliver production growth of ~4% YoY. And increasing that budget to $1.4 billion would enable volume growth of ~7% YoY and every incremental $200 million would result in another 2% YoY growth. Meanwhile, consensus is forecasting a ~$1.8 billion budget will deliver just ~8% YoY volume growth in 2016, implying the Street is likely underestimating the capital efficiency improvements at SWN. With capital efficiency improvements as more dollars are directed to the Marcellus, we estimate SWN delivers 10% YoY growth with $1.7 billion in spending next year. Nonetheless, it still implies a $550 million free cash flow deficit at the current futures strip implying downside risk to our forecasted budget if the futures strip holds.

Valuation

SWN is trading at a discount to gassy resource peers on EV/EBITDX and price/NAV. Our $22 price target assumes 6.0x 2016E EBITDX, two turns below its historical average given its high financial leverage.

Southwestern   Price target: $22   Upside: 43%   Buy

Share data				
Mkt cap ($ bn)	5.9	% of S&P 500		0.09%
Mkt cap ($ bn)	5.9	Daily trading volume (m)		1.87
Price ($)	15.4	Free float		94.7%
12m high	39.57	Major shareholders	Capital Research	12.3%
12m low	14.78		Vanguard Group	8.2%
RIC code	SWN.N		Wellington Mgmt.	6.5%
Bloomberg code	SWN US			

Operating	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Total production (000 boe/d)	300	351	448	494	552	620	688
Growth	16%	17%	28%	10%	12%	12%	11%
Oil production (000 bbl/d)	0	1	33	41	51	64	81
Growth	67%	238%	2506%	25%	24%	24%	27%
Gas production (000 mcf/d)	1796	2099	2491	2716	3002	3336	3640
Growth	16%	17%	19%	9%	11%	11%	9%

Profit & Loss ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
WTI $/bbl	**98.02**	**92.89**	**49.00**	**52.50**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P Revenues	2,404	2,870	2,404	2,633	3,569	4,402	4,932
Other Revenues	1	(8)	(36)	0	0	0	0
Total Revenues	**2,405**	**2,862**	**2,369**	**2,633**	**3,569**	**4,402**	**4,932**
Costs	(564)	(696)	(911)	(1,037)	(1,189)	(1,376)	(1,572)
Admin, G&A	(157)	(183)	(216)	(217)	(230)	(231)	(241)
DD&A	(735)	(884)	(1,174)	(1,297)	(1,445)	(1,623)	(1,800)
Exploration expense	0	0	0	0	0	0	0
Adj Operating Income	**880**	**1,012**	**(25)**	**(11)**	**581**	**1,018**	**1,146**
Other income & Associates	327	358	299	261	252	225	173
Net interest	(42)	(58)	(19)	(19)	(19)	(19)	(19)
Pre-tax profit	**1,166**	**1,312**	**255**	**231**	**814**	**1,223**	**1,300**
Tax	(460)	(513)	(81)	(87)	(301)	(477)	(503)
Minorities	0	0	0	0	0	0	0
Adj Net income	**705**	**800**	**61**	**37**	**405**	**746**	**797**
Special items	0	0	0	0	0	0	0
Rep Net income	**705**	**800**	**61**	**37**	**405**	**746**	**797**

Per Share	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
No. shares (avg)	351	352	382	384	384	453	454
EPS	$2.01	$2.27	$0.16	$0.10	$1.05	$1.65	$1.75
Adj EPS	$2.01	$2.27	$0.16	$0.10	$1.05	$1.65	$1.75
Adj CEPS	$5.35	$6.24	$3.35	$3.65	$5.45	$5.95	$6.50
DPS (net)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pay out ratio (EPS)	0%	0%	0%	0%	0%	0%	0%
Pay out ratio (Adj CEPS)	0%	0%	0%	0%	0%	0%	0%
Tax rate	39%	39%	32%	38%	37%	39%	39%

Cash Flow ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net Income	704	924	(670)	144	513	746	797
DD&A	791	942	1,238	1,364	1,515	1,698	1,879
Exploration	0	0	0	0	0	0	0
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	490	404	965	82	261	448	473
Working capital/other	(75)	65	108	0	0	0	0
Net cashflow from ops	**1,909**	**2,335**	**1,641**	**1,591**	**2,289**	**2,892**	**3,148**
Disposals	18	43	703	0	0	0	0
Shares issued	10	12	669	0	0	583	0
Sources	**1,936**	**2,390**	**3,013**	**1,591**	**2,289**	**3,476**	**3,148**
Capex	(2,253)	(2,043)	(1,875)	(1,700)	(2,100)	(2,600)	(3,000)
Acquisitions	0	(5,298)	(569)	0	0	0	0
Dividends	0	0	0	0	0	0	0
Shares purchased	0	0	0	0	0	0	0
Other	44	(36)	35	0	0	0	0
Applications	**(2,208)**	**(7,377)**	**(2,409)**	**(1,700)**	**(2,100)**	**(2,600)**	**(3,000)**
Cash surplus/(deficit)	(312)	(4,986)	2,156	(217)	81	876	148
FX/other	(54)	201	(2,036)	0	0	1,725	0
Decrease in net debt	**(367)**	**(4,785)**	**120**	**(217)**	**81**	**2,601**	**148**

Balance Sheet ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Net debt	1,994	6,779	6,659	6,876	6,795	4,194	4,046
Equity	3,622	4,662	4,479	4,516	4,921	7,975	8,772
Capital employed	5,616	11,441	11,138	11,392	11,716	12,170	12,818
Net debt/equity	55%	145%	149%	152%	138%	53%	46%
Net debt/Net debt & Equity	36%	59%	60%	60%	58%	34%	32%
NAV	16.0	32.5	29.1	29.6	30.5	26.8	28.2
ROAE	21.2%	19.3%	1.1%	0.6%	6.3%	10.2%	9.5%
ROACE	14.2%	13.1%	0.8%	0.4%	3.6%	6.3%	6.3%

EV Valuation ($m)	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**
Market capitalisation	12,939	14,077	5,862	5,906	5,906	5,403	5,403
Core net debt (inc. associates)	1,811	4,386	6,719	6,767	6,835	5,495	4,120
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**14,750**	**18,463**	**12,581**	**12,673**	**12,741**	**10,898**	**9,523**
Net income before minorities	705	800	61	37	405	746	797
DD&A + exploration	791	942	1,238	1,364	1,515	1,698	1,879
Other group non-cash items	465	573	20	40	212	292	317
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension	(42)	(58)	(19)	(19)	(19)	(19)	(19)
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**1,919**	**2,257**	**1,300**	**1,421**	**2,113**	**2,717**	**2,973**
EV/DACF	**7.7x**	**8.2x**	**9.7x**	**8.9x**	**6.0x**	**4.0x**	**3.2x**

Statoil

Investment case

We see Statoil as having developed the most comprehensive response to falling returns – and we note that this response was initiated well before oil prices fell. This meant the company was best placed to articulate a structured plan to countering the low oil price environment. Hence, while Statoil is clearly heavily upstream oriented we see a trajectory towards very competitive cashflow neutrality. The first two quarters of 2015 appear to demonstrate that the initiatives are working with meaningful opex reductions in the Norway and in International. Because of the high concentration of its activities in a single geography and the scope for repetition and standardization plus Statoil's high number of operatorships its leverage to self-help efforts would appear to us to be almost unique. Ally this to a strong exploration effort, adept M&A and a relatively strong balance sheet and we believe the company should be able to resist a period of weak commodity prices. We think concerns around the dividend are misplaced unless the outlook is significantly more bearish than our view especially given the traction around capex and opex efficiency. The payout ratio is actually not high in cashflow terms and the switch to US$ removes some FX mismatch. The departure of Helge Lund as CEO created some uncertainty, but we think his replacement, Eldar Saetre, is likely a safe pair of hands and we expect him to drive forward and enhance the transformation plan.

Financial and operational outlook

2Q 2015 gearing stood at 21% which suggests enough balance sheet capacity to withstand a period of low prices as we envisage. We estimate that 2015 cash neutrality is achieved at ~$100/bbl once working capital lag effects are taken into account but we forecast that falling to $73/bbl by 2017 on a combination of improved operating cashflow (portfolio and cost reduction) and lower capex – we forecast a combination of project deferrals and cost savings pushing capex well below recent trend levels to ~$16bn (we note still relatively high on a capex intensity basis). 2013 ROACE was 11.8% and we little prospect of this returning without significant balance sheet restructuring or meaningfully higher oil prices than we forecast. Our capex estimate is in the middle of the range of flexibility management estimates it has for the 2017/18 period. And commensurate with that our production growth estimates are below target levels as well at ~1.5% CAGR out to 2018. We believe the quality of the Johan Sverdrup development provides the company with very significant tactical flexibility in the medium term on the NCS.

Upside scenario

A $1/bbl change in the oil price generates ~3% and ~1% on our UBSe EPS and DACF estimates. The clear upside scenario comes with the company realising a greater proportion of its underlying NAV – a key strategy for an E&P company, we believe. This implies ~34% upside from current share price levels (or ~Nkr165 at $80/bbl long term). We believe that the primary challenge for the company is strategic – continuing to show value through portfolio management and strict allocation of capital – and also operational/financial – continuing to deliver improvements in key segments. Validating this Upstream oriented IOC model and putting the shares on a sector average cash flow multiple implies ~Nkr190share.

Downside scenario

The downside scenario is a lower oil price (sensitivity above) or that Statoil shares revert to a value trap and continue at the current rating or worse. A normalised 5-year trough EV/DACF of 3.4x implies a downside scenario share price to ~Nkr105. This may be driven by the failure to share the capital value creation at the company with investors. A $1/Mcf lower European gas price than we forecast would impact earnings by ~7%.

Catalysts

28 Oct 2015	3Q15 results
2015	Start-ups: Goliat, Edvard Grieg, Corrib
2015	Exploration/appraisal at Bay du Nord
Early 2016	Update to strategic plan likely to incorporate performance/learnings from initial phase
2016?	Tanzania LNG sanction?
TBD	Further disposals

Valuation

Our price target of NKr160 is set at a 2017E EV/DACF of 4.5x, in line with the 'second-tier' European majors, vs. the sector at 5.4x and the 10 year average at 4.3x. This equates to a P/E of 12.2x and dividend yield of 4.8% (3-year average multiples of 10.8x and 4.6%, respectively). We have a Buy rating on Statoil.

Statoil Price target: NOK 160 Upside: 32% Buy

Share data				
Mkt cap (NKr bn)	384.8	% of OBX		18.68%
Mkt cap ($ bn)	46.3	% of MSCI Pan-Euro		0.21%
Price (NKr)	121.0	% of Stoxx 600		0.46%
12m high	180.80	Daily trading volume		5.1
12m low	116.30	Free float		33.0%
RIC code (ADR)	STL.OL	Major shareholders	Norwegian government	67.0%
Bloomberg code	STL NO		Noway Gov. Pension Fund	3.3%
ADR ratio	1		SAFE Investment	1.1%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	1756	1729	1739	1759	1806	1806	1780
Growth	-3%	-2%	1%	1%	3%	0%	-1%
Ref thru'puts (000 b/d)	295	295	295	295	295	295	295
Growth	0%	0%	0%	0%	0%	0%	0%
Product sales (000 b/d)	193	193	193	193	193	193	193
Growth	0%	0%	0%	0%	0%	0%	0%

Profit & Loss (NOK m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent crude (US$/bbl)	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
NKr/$	**5.88**	**6.30**	**7.72**	**7.70**	**7.70**	**7.70**	**7.70**
NCS E&P	132,400	105,500	59,303	60,276	82,005	89,846	91,255
Int'l E&P	20,600	13,900	(7,734)	1,356	22,876	29,235	35,359
MPR	11,100	17,800	20,051	16,327	15,687	15,128	15,203
Others	(900)	(1,100)	(1,700)	(410)	(420)	(431)	(442)
Total Operating Profit (Adj.)	**163,200**	**136,100**	**69,921**	**77,549**	**120,147**	**133,779**	**141,375**
Net Financial Items (Adj.)	(1,600)	(4,600)	(5,890)	(6,627)	(6,599)	(6,621)	(6,307)
Taxation (Adj.)	(114,700)	(93,100)	(45,250)	(48,180)	(74,878)	(83,410)	(87,677)
Minorities	600	0	0	0	0	0	0
Net Income (Adjusted)	**47,500**	**38,400**	**18,781**	**22,741**	**38,670**	**43,748**	**47,392**
Total non-recurring items	(7,700)	(16,600)	(38,500)	0	0	0	0
Net Income (Reported)	**39,800**	**21,800**	**(19,719)**	**22,741**	**38,670**	**43,748**	**47,392**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. of shares (avg.)	3,180	3,179	3,180	3,180	3,179	3,179	3,179
EPS	12.52	6.86	-6.20	7.15	12.16	13.76	14.91
Adj EPS	14.94	12.08	5.91	7.15	12.16	13.76	14.91
Adj CEPS	28.87	30.15	31.73	34.57	41.18	43.70	45.96
DPS (net)	7.00	7.10	6.99	6.78	6.85	7.02	7.23
EPS/ADR	$2.13	$1.09	-$0.80	$0.93	$1.58	$1.79	$1.94
Adj EPS/ADR	$2.54	$1.92	$0.76	$0.93	$1.58	$1.79	$1.94
Adj CEPS/ADR	$4.91	$4.78	$4.11	$4.49	$5.35	$5.68	$5.97
DPS (net)/ADR	$1.19	$1.13	$0.90	$0.88	$0.89	$0.91	$0.94
Payout Ratio (Adj. EPS)	47%	59%	118%	95%	56%	51%	48%
Pay out ratio (Adj CEPS)	24%	24%	22%	20%	17%	16%	16%
Tax Rate (Adj.)	71%	71%	71%	68%	66%	66%	65%

Cash Flow (NOK m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	39,800	22,000	(19,719)	22,741	38,670	43,748	47,392
DD&A	72,400	68,740	123,597	82,921	85,483	87,486	89,939
Exploration Expense	3,100	13,700	11,200	4,000	4,000	4,000	4,000
Minority Adjustments	(600)	0	0	0	0	0	0
Deferred taxes	(10,200)	500	0	0	0	0	0
Working Capital / Other	(3,200)	21,560	(26,712)	(244)	1,524	3,211	4,305
Net Cash Flow from Ops	**101,300**	**126,500**	**88,366**	**109,418**	**129,676**	**138,444**	**145,636**
Disposals	27,100	22,600	23,500	0	0	0	0
Shares Issued	0	0	0	0	0	0	0
Sources	**128,400**	**149,100**	**111,866**	**109,418**	**129,676**	**138,444**	**145,636**
Capex	(113,300)	(120,300)	(130,194)	(117,071)	(113,014)	(112,034)	(109,318)
Acquisitions	(24,300)	(12,800)	(41,200)	0	0	0	0
Dividends	(21,500)	(33,700)	(22,849)	(21,553)	(21,553)	(21,984)	(22,643)
Shares Purchased	0	0	0	0	0	0	0
Applications	**(159,100)**	**(166,800)**	**(194,243)**	**(138,624)**	**(134,567)**	**(134,018)**	**(131,962)**
Cash Surplus / (deficit)	(30,700)	(17,700)	(82,377)	(29,205)	(4,891)	4,427	13,675
FX/Other	11,900	(13,500)	41,500	(0)	0	(0)	0
Decrease in net debt	**(18,800)**	**(31,200)**	**(40,877)**	**(29,205)**	**(4,891)**	**4,427**	**13,675**

Balance Sheet (NOK m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Debt	58,100	89,300	130,177	159,382	164,273	159,846	146,171
Equity	355,550	381,100	348,602	349,790	366,692	388,126	412,536
Capital Employed	413,650	470,400	478,778	509,172	530,965	547,972	558,707
Net Debt/Equity	16%	23%	37%	46%	45%	41%	35%
Net Debt / Net Debt+Equity	14%	19%	27%	31%	31%	29%	26%
NAV	111.8	119.9	109.6	110.0	115.3	122.1	129.8
ROAE	13.4%	10.1%	5.4%	6.5%	10.6%	11.3%	11.5%
ROACE	12.3%	9.0%	4.4%	5.1%	7.9%	8.6%	9.0%

EV Valuation (NOK m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	435,177	528,885	384,792	384,792	384,792	384,792	384,792
Core net debt (inc. associates)	48,700	73,700	109,738	144,779	161,827	162,059	153,009
Buy-out of minorities	(6,000)	0	0	0	0	0	0
Pension provisions	0	19,900	19,900	19,900	19,900	19,900	19,900
Peripheral assets	0	0	0	0	0	0	0
EV	**477,877**	**622,485**	**514,430**	**549,471**	**566,519**	**566,752**	**557,701**
Net income before minorities	39,200	22,000	(19,719)	22,741	38,670	43,748	47,392
DD&A + exploration	75,500	82,440	134,797	86,921	89,483	91,486	93,939
Other group non-cash items	(19,900)	(11,300)	(19,100)	0	0	0	0
Core associates non-cash items	50	50	50	50	50	50	50
Core post-tax interest + pension cost	3,360	5,320	6,363	6,739	6,719	6,735	6,515
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**98,210**	**98,510**	**102,391**	**116,451**	**134,922**	**142,019**	**147,896**
EV/DACF	**4.9x**	**6.3x**	**5.0x**	**4.7x**	**4.2x**	**4.0x**	**3.8x**
EV/DACF $	**4.9x**	**6.4x**	**4.8x**	**4.5x**	**4.0x**	**3.8x**	**3.6x**

Suncor Energy

Investment case

Suncor is our top pick amongst the Canadian Integrated space, boasting a strong balance sheet and robust business model, with the ability to fund its current dividend and sustaining capital at a WTI oil price down to $50/bbl. Furthermore, with profitability initiatives well underway heading into the downturn, we believe the company is uniquely positioned to take advantage of the current environment and forecast declining operating costs and significant operational momentum over the next two years. Specifically, we would highlight potential capital cost reductions at its Fort Hills project, with $1.5b in contingencies largely untapped, and note that the company continues to factor in very little price related cost savings into its 2015 capital cost projections. We rate SU a Buy with a Price Target of $42, based on 10.5x our 2016E DACF.

Financial and operational outlook

SU is in solid financial shape with 2015E Net Debt/Capitalization of 12% and Net Debt/Cash Flow of 1.4x. The company has ample liquidity and its financial covenants stipulate Debt/Capitalization <60%. We estimate that 2016 cash neutrality is achieved at $57/bbl, though we note this contains significant growth spending, and estimate the company could fund its sustaining capital and dividend at an oil price down to $50/bbl. We estimate Net Debt/Cap peaks in 2017 at 17% as spending on the company's Fort Hills projects winds down and associated cash flows come on stream. Similarly, we expect capex to fall from a peak of $7.0 bn in 2014 to $4.3 bn in 2018 and 5-year production growth (2015-2020) of 3% driven by additions from Fort Hills and Hebron.

Upside scenario

Our upside case assumes SU successfully executes its planned Fort Hills project for 10% below current capital guidance and 6 months ahead of the current scheduled date of late 2017. As a result the company's average 2015-2018 debt adjusted cash flow per share growth increases, free cash flow rises sooner, and we raise our target multiple by 1.0x to 11.5x. Assuming this multiple – and a $0.50/MMBtu increase in natural gas prices and a $5.00/Bbl increase WTI prices (as well as a $2/bbl decrease in the WTI/WCS differential) – implies upside to ~$52/share.

Downside scenario

Our downside case assumes SU executes its planned Horizon expansion 12 months behind the current scheduled date of late 2017. As a result the company's average 2015-2018 debt adjusted cash flow per share growth decreases, significant free cash flow growth is pushed out until 2019, and we lower our target multiple by 1.0x to 9.5x. Assuming this multiple – and a $0.50/MMBtu decrease in natural gas prices and a $5.00/Bbl decrease in WTI prices (as well as a $5/bbl decrease in the WTI/WCS differential) – implies downside to ~$30/share.

Catalysts

2015 Quarterly results: We believe there is downside to the company's capital spending guidance and cost guidance

2015 Reversal of line 9b will give SU's Montreal refinery access to inland crude

2016 Fort Hills status update which could include details on its $1.5b contingency budget

Valuation

At 7.8x 2016E debt-adjusted cash flow, SU shares trade at a 13% discount to the peer group average. In time we expect the discount to narrow driven by free cash flow, operating momentum, and increased shareholder returns. Our $42 price target (down from $46) assumes 10.5x 2016E DACF, an 8% discount to the peer group based on lower forecasted DACFPS.

Suncor Energy | Price target: $42 | Upside: 20% | Buy

Share data				
Mkt cap ($ bn)	50.7	% of TSX 60		3.87%
Mkt cap ($ bn)	38.2	% of MSCI Energy		1.59%
Price ($)	35.0	Daily trading volume (m)		3.45
12m high	44.08	Free float		100.0%
12m low	31.37	Major shareholders	Capital Group	5.5%
RIC code	SU.TO		Fidelity	3.4%
Bloomberg code	SU CN		RBC AM	2.9%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	643	618	685	686	723	735	807
Growth	2%	-4%	11%	0%	5%	2%	10%

Profit & Loss (C$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
WTI $/bbl	**97.99**	**93.01**	**48.98**	**52.51**	**65.00**	**70.00**	**75.00**
US Natural Gas Price $/mcf	**3.65**	**4.45**	**2.85**	**3.25**	**3.75**	**4.00**	**4.00**
E&P	4,732	5,378	(207)	1,148	3,019	3,015	4,556
R&M	2,736	2,162	2,839	2,220	1,960	1,774	1,784
Corporate & Other	(674)	(687)	(552)	(558)	(558)	(558)	(558)
Operating Profit	**6,794**	**6,853**	**2,080**	**2,809**	**4,421**	**4,231**	**5,782**
Other income & Associates	704	628	496	380	380	380	380
Net interest	(1,162)	(1,429)	(1,436)	(651)	(664)	(668)	(695)
Other (inc non-operating)	40	(1,462)	102	0	0	0	0
Pre-tax Profit	**6,376**	**4,590**	**1,242**	**2,538**	**4,137**	**3,943**	**5,468**
Tax	(2,465)	(1,891)	(563)	(635)	(1,655)	(1,577)	(2,187)
Minorities	0	0	0	0	0	0	0
Rep Net income	**3,911**	**2,699**	**679**	**1,904**	**2,482**	**2,366**	**3,281**
Special items	789	1,921	693	0	0	0	0
Adj Net income	**4,700**	**4,620**	**1,372**	**1,904**	**2,482**	**2,366**	**3,281**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	1,503	1,465	1,445	1,432	1,418	1,400	1,379
EPS	2.60	1.84	0.47	1.33	1.75	1.69	2.38
Adj EPS	3.13	3.15	0.95	1.33	1.75	1.69	2.38
Adj CEPS	6.26	6.17	4.56	4.97	5.86	5.93	7.12
DPS (net)	0.73	1.02	1.13	1.16	1.28	1.47	1.69
Pay out ratio (EPS)	23%	32%	119%	87%	73%	87%	71%
Pay out ratio (Adj CEPS)	12%	16%	25%	23%	22%	25%	24%
Tax rate	0%	0%	0%	0%	0%	0%	0%

Cash Flow (C$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	3,911	2,699	679	1,904	2,482	2,366	3,281
DD&A	4,892	4,589	5,324	5,318	5,450	5,522	5,931
Exploration	82	104	345	300	284	343	360
Other non-cash items	527	1,666	235	(400)	96	73	256
Working capital	688	(122)	(960)	0	0	0	0
Net cashflow from ops	**10,100**	**8,936**	**5,624**	**7,122**	**8,312**	**8,305**	**9,827**
Disposals	352	103	269	0	0	0	0
Shares issued	112	247	49	0	0	0	0
Sources	**10,564**	**9,286**	**5,942**	**7,122**	**8,312**	**8,305**	**9,827**
Capex	(6,777)	(6,961)	(6,026)	(5,932)	(5,363)	(4,302)	(4,684)
Acquisitions	0	0	0	0	0	0	0
Dividends	(1,095)	(1,490)	(1,637)	(1,660)	(1,808)	(2,053)	(2,326)
Buybacks	(1,675)	(1,671)	(248)	(493)	(490)	(728)	(717)
Other	0	0	0	0	0	0	0
Applications	**(9,547)**	**(10,122)**	**(7,911)**	**(8,085)**	**(7,661)**	**(7,083)**	**(7,727)**
Cash surplus/(deficit)	1,017	(836)	(1,969)	(963)	651	1,221	2,100
FX/other	(1,192)	(568)	(785)	535	597	410	0
Decrease in net debt	**(175)**	**(1,404)**	**(2,754)**	**(428)**	**1,248**	**1,632**	**2,100**

Balance Sheet (C$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	5,145	6,549	9,303	9,731	8,483	6,851	4,751
Equity	41,181	41,603	39,926	39,811	40,193	39,788	39,626
Capital employed	46,326	48,152	49,229	49,543	48,675	46,639	44,376
Net debt/equity	12%	16%	23%	24%	21%	17%	12%
Net debt/Net debt & Equity	11%	14%	19%	20%	17%	15%	11%
NAV	30.8	32.9	34.1	34.6	34.3	33.3	32.2
ROAE	9.7%	6.5%	3.4%	4.8%	6.2%	5.9%	8.3%
ROACE	11.0%	8.3%	3.7%	4.5%	7.0%	6.8%	9.1%

EV Valuation (C$m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	50,534	58,666	50,533	50,097	49,598	48,979	48,244
Core net debt (inc. associates)	5,145	6,549	9,303	9,731	8,483	6,851	4,751
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**55,679**	**65,215**	**59,836**	**59,828**	**58,081**	**55,830**	**52,995**
Net income before minorities	3,911	2,699	679	1,904	2,482	2,366	3,281
DD&A + exploration	4,974	4,693	5,669	5,618	5,734	5,865	6,291
Other group non-cash items	527	1,666	-458	-400	96	73	256
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	(872)	(1,072)	(1,077)	(488)	(498)	(501)	(521)
less: peripheral income/cash flow	1,743	2,144	2,847	976	996	1,002	1,042
DACF	**10,284**	**10,130**	**7,660**	**7,610**	**8,810**	**8,806**	**10,348**
EV/DACF	**5.4x**	**6.4x**	**7.8x**	**7.9x**	**6.6x**	**6.3x**	**5.1x**
EV/DACF $	**5.4x**	**6.4x**	**7.5x**	**7.6x**	**5.7x**	**5.4x**	**4.4x**

TOTAL

Investment case

Total continues to invest heavily in the upstream ahead of an expected burst in production growth across the period 2015-2019. Although 2015 has seen impressive reported production growth this is largely accounted for by the renewal of the Adco licence lost in 2014 and volumes across 2013-15 are basically flat. The corollary of delivering meaningful number of new projects is that capex should begin to drop away, helping free cashflow. Surmont Ph2 has begun production over the summer 2015 and Laggan Tomore, GLNG and Vega Pleyade are expected before year-end. Four more projects (including Icthys) are due in 2016 and two big deepwater prjects (Egina and Kaombo) are due in 2017. Rounding out this surge will be Fort Hills oil sands and Yamal LNG in the 2018/19 plus a number of smaller projects. With no FIDs in 2015 and potentially none in 2016 (Uganda, Gulf LNG and Libra are the next big projects) activity will then likely drop. Clarification of the pace of development in the upstream and the spending plans of the company will be revealed at the mid-September strategy update, the first of the Majors to be formulated wholly in a lower oil price environment.

Under the new CEO, Patrick Pouyanne, we expect the focus of the company to be on reducing cash spend and cutting cash neutrality – this has been well signalled. Although the reputation of the company is for secure finances, even with a surprisingly strong European downstream we estimate cash neutrality to be at ~$100/bbl in 2015. Reduced cash neutrality and reduced balance sheet gearing should be a priority as should ensuring the company grows into a dividend that appears too high to us (hence the introduction of the scrip). The danger for Total will be that it swings too far the other way, starving the business of growth capital. Care should also be taken with the lower spending narrative as we believe that Total should also be taking advantage of financial distress among smaller market participants, especially where its organic exploration efforts are likely to be very much curtailed.

Financial and operational outlook

2Q 2015 gearing stood at 21%. However this includes €5.6bn of perpetual subordinated debt and restated for this gearing would be ~500bps higher. We estimate that 2015 cash neutrality is achieved at ~$100/bbl but declines to below $80/bbl in forecast periods as capex ameliorates and the scrip dividend helps. Disposals form an active part of the financial strategy at present, being $3.75bn in 1H2015 and with a further $1.3bn achieved since then, even. We see gearing peaking in 2016 at 23%. ROACE peaked in the mid 20oos at over 25% but we don't forecast it recovering to above 10% before the end of the decade. Total sees 2015 capex at $23-24bn and we estimate this to fall not below ~$20bn by 2017, in line with historical threshold levels allowing meaningful reinvestment in the upstream business. Five-year production growth (2014-2019) should be an impressive at 6% aided by the addition of Adco but also very competitive underlying growth.

Upside scenario

On 2015E a US$1/bbl move on the oil price is equivalent to 2.3% on net income while US$1/bbl on the refining margin is equivalent to ~6%. Delivery on the strategy of cost reductions (where we remain cautious on lack of visibility) would imply ~60% upside to our 2017E forecast in free cash flow terms and a ~13% uplift to DACF (equivalent to €8/share) depending on the disposals component.

Downside scenario

Indications of a failure to deliver strategy would push the multiples towards the bottom end of the recent trading range relative to the sector, which would give the 2016 fair value share price of ~€40/share, we estimate. We allocate ~€1/share of value to the direct stake in Yamal LNG and ~€2/share to Novatek, and €4/share for Yemen in a NAV of ~€54/share.

Catalysts

23 September 2015	Strategy update
29 October 2015	3Q15 results
2H15	Refinancing of Yamal?
2H15	Laggan, GLNG, Vega Pleyade start-up
NB	No FIDs expected this year

Valuation

Our €41.50/share price target is set at a 2017E EV/DACF of 5.5x, in line with the European majors, vs. the sector at 5.4x but above the 3 year average at 4.9x. This equates to a P/E of 10.9x and dividend yield of 5.6% (3-year average multiples of 8.6x and 5.6%, respectively). We are Neutral on Total.

TOTAL Price target: € 41.50 Upside: 4% Neutral

Share data				
Mkt cap (€ bn)	91.6	% of CAC 40		9.47%
Mkt cap ($ bn)	102.1	% of Euronext 100		4.47%
Price (€)	40.0	% of MSCI Pan-Euro		1.22%
12m high	51.77	Daily trading volume		7.4
12m low	37.71	Free float		100%
RIC code (ADR)	TOTF.PA	Major shareholders	Amundi	7.17%
Bloomberg code	FP FP		Blackrock	6.69%
ADR ratio	1		Groupe Bruxelles Lambert	2.87%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Production (000 boe/d)	2299	2146	2320	2434	2602	2775	2889
Growth	0%	-7%	8%	5%	7%	7%	4%
Ref thru'puts (000 b/d)	1780	1773	1873	1778	1764	1771	1777
Growth	0%	0%	6%	-5%	-1%	0%	0%
Product sales (000 b/d)	2098	2204	2252	2302	2354	2407	2462
Growth	23%	5%	2%	2%	2%	2%	2%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent Crude $/bbl	108.74	99.38	55.00	57.50	70.00	75.00	80.00
$/€	1.00	1.00	1.00	1.00	1.00	1.00	1.00
E&P	23,700	17,156	5,568	5,738	12,185	15,362	16,984
S&M	1,766	2,739	5,003	3,439	3,250	3,159	3,259
R&C	2,152	1,709	1,815	1,848	1,881	1,916	1,952
Other	(656)	(887)	(800)	(800)	(750)	(700)	(721)
Adj EBIT	26,962	20,717	11,587	10,225	16,566	19,738	21,473
Net interest	(804)	(640)	(844)	(946)	(1,135)	(1,183)	(1,208)
Other financial	67	717	777	120	120	120	120
Other special items	0	0	0	0	0	0	0
Pretax profit	26,225	20,794	11,520	9,399	15,551	18,674	20,385
Tax	(15,094)	(11,073)	(4,464)	(3,868)	(7,110)	(8,944)	(9,881)
Affiliates	3,435	3,315	2,063	1,907	2,297	2,501	2,644
Goodwill amortisation	0	0	0	0	0	0	0
Minorities	(274)	(199)	(171)	(208)	(295)	(323)	(339)
Adj Net Income	14,292	12,837	8,948	7,230	10,442	11,908	12,809
Special items	(3,064)	(8,593)	(53)	(0)	0	0	0
Rep Net Income	11,228	4,244	8,895	7,230	10,442	11,908	12,809

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	2,272	2,285	2,303	2,374	2,439	2,449	2,449
EPS	4.94	1.86	3.86	3.05	4.28	4.86	5.23
Adj EPS	6.29	5.62	3.88	3.05	4.28	4.86	5.23
Adj CEPS	11.59	9.37	8.96	8.38	10.12	11.08	11.73
DPS (net)	2.38	2.44	2.44	2.44	2.48	2.49	2.53
EPS/ADR	4.94	1.86	3.86	3.05	4.28	4.86	5.23
Adj EPS/ADR	6.29	5.62	3.88	3.05	4.28	4.86	5.23
Adj CEPS/ADR	11.59	9.37	8.96	8.38	10.12	11.08	11.73
DPS (net)/ADR	3.16	2.44	2.75	2.78	2.83	2.84	2.88
Pay out ratio (EPS)	50%	58%	71%	91%	66%	58%	55%
Pay out ratio (Adj CEPS)	27%	35%	31%	33%	28%	26%	25%
Tax rate	57%	52%	38%	41%	46%	48%	48%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	11,228	4,244	8,895	7,230	10,442	11,908	12,809
DD&A	13,358	20,859	13,407	12,239	13,652	14,537	15,177
Minority adjustment	274	199	171	208	295	323	339
Other non-cash items	1,128	(4,174)	(2,860)	(176)	(92)	(41)	(23)
Working capital	2,525	4,480	(335)	(402)	(987)	(360)	(349)
Net cashflow from ops	28,513	25,608	19,279	19,099	23,311	26,367	27,954
Disposals	6,399	6,190	6,173	240	240	240	240
Shares issued	0	0	0	0	0	0	0
Sources	34,912	31,798	25,452	19,339	23,551	26,607	28,194
Capex	(29,918)	(27,969)	(24,223)	(20,028)	(19,620)	(20,093)	(21,407)
Acquisitions	(4,513)	(2,540)	(2,777)	0	0	0	0
Dividends	(7,284)	(7,462)	(3,131)	(2,935)	(5,220)	(7,431)	(7,539)
Parent shares purchased	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Applications	(41,715)	(37,971)	(30,131)	(22,963)	(24,840)	(27,524)	(28,946)
Cash surplus/(deficit)	(6,803)	(6,173)	(4,679)	(3,624)	(1,289)	(917)	(752)
FX/other	3,432	1,052	6,280	(0)	0	(0)	(0)
Decrease in net debt	(3,371)	(5,121)	1,601	(3,624)	(1,289)	(917)	(752)

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	24,828	29,949	28,348	31,971	33,261	34,177	34,929
Equity	103,379	93,531	102,241	106,744	112,262	117,062	122,671
Capital employed	128,207	123,480	130,589	138,715	145,523	151,239	157,600
Net debt/Equity	24%	32%	28%	30%	30%	29%	28%
Net debt/Net debt & Equity	19%	24%	22%	23%	23%	23%	22%
Net asset per share	45.5	40.9	44.4	45.0	46.0	47.8	50.1
ROAE	15.4%	14.0%	11.3%	7.9%	8.3%	10.0%	10.6%
ROACE	12.9%	11.3%	9.1%	6.6%	6.9%	8.2%	8.7%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	102,084	102,084	102,084	102,084	102,084	102,084	102,084
Core net debt (inc. associates)	28,563	32,640	36,807	40,706	43,267	44,490	45,453
Buy-out of minorities	2,740	1,990	1,710	2,083	2,953	3,232	3,392
Pension provisions	4,078	3,799	3,799	3,799	3,799	3,799	3,799
Peripheral assets	0	0	0	0	0	0	0
EV	137,465	140,514	144,400	148,672	152,103	153,606	154,729
Net income before minorities	14,566	13,036	9,119	7,438	10,738	12,231	13,148
DD&A + exploration	15,526	22,824	14,996	13,439	14,876	15,785	16,451
Other group non-cash items	1,109	(3,981)	(2,695)	(176)	(92)	(41)	(23)
Core associates non-cash items	4,142	7,193	3,927	4,283	3,735	3,751	3,842
Core post-tax interest + pension cost	808	685	809	888	1,024	1,054	1,063
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	36,151	39,758	26,157	25,872	30,281	32,781	34,481
EV/DACF	4.5x	4.7x	5.5x	5.7x	5.0x	4.7x	4.5x

Tullow Oil

Investment case

Tullow presents an unusual conundrum. Its resource base is attractive, even in a low oil price world: core projects in Ghana (T.E.N, M.T.A), Uganda (Lake Albert) and Kenya (South Lokichar) support a 20% 5-year production CAGR (2015-20E) with solid economics (IRR's: 17-36%; project breakeven: $33-50/bbl). However, having debt-financed an aggressive exploration programme for several years and failed to deliver the T.E.N farm-out, it came into the downturn highly geared. And another year of heavy capex now lies ahead to bring T.E.N to first oil in 2H16. Liquidity looks just about sufficient (assuming no mishaps) but the equity carries risk and is highly geared to oil prices. With a pathway to >200kboed/d early in the next decade, as Kenya and Uganda are developed, the assets would not look out of place slotted into an IOC or NOC portfolio. A deal across multi-African jurisdictions would be complex but cost of capital arbitrage could enhance deal economics. However, based on current valuation we do not see an obviously mispriced stock.

Financial and operational outlook

Another year of heavy capex now lies ahead to bring T.E.N to first oil in 2H16. We see net debt / EBITDA at 4.5x in FY15-16E. Tullow has committed credit facilities of $6.3bn and at 1H15 ~$2.4bn of headroom. We see net debt peak at $5.1bn in 2H16E, ahead of T.E.N first oil. Consistent with this management has guided to $1bn of headroom in mid-2016. It has a covenant waiver (was 3.5x) on its $3.7bn RBL and $1.0bn corporate facility to see it to T.E.N first oil. Prima facie, existing facilities suffice under most conceivable oil price scenarios. But a delay to T.E.N or production interruption would leave the balance sheet in a tight spot, with additional funding required at a tough point in the cycle. Beyond T.E.N key growth projects are inshore Kenya and Uganda but we would not expect Tullow to sanction these projects on current equity levels.

Upside scenario

Upside Fair Value: £3.50/sh

The key source of upside lies in successful delivery of key projects T.E.N; Lokichar and Lake Albert which could add ~£0.50/sh to NAV through de-risking effects. Exploration and appraisal in Kenya could also be a wildcard. Tullow will attempt to unlock the Kerio Valley basin (1Bnbbl potential) later this year plus further appraisal of the Lokichar. It also tests a handful of offshore plays. The programme tests unrisked upside of ~850Mmbbl and we carry it at £0.11-2.40/sh (risked-unrisked). We see a potential reserve upgrade (UBSe: 655Mmbbl) following this summer's appraisal work with every 100Mmbbl (gross) worth £0.12/sh.

From a macro perspective a $10/bbl increase in our LT oil price forecast ($80/bbl Brent) adds £0.90/sh to our NAV

Downside scenario

Downside Fair Value: £2.00/sh

Unsuccessful exploration and project execution issues in Kenya, Uganda and Ghana are the primary sources of downside. Cost overruns or delays to T.E.N could cause a funding squeeze. We carry the exploration portfolio at £0.11-2.40/sh (risked-unrisked) in our NAV. A 1-year project delay reduces value by ~10%, all else equal.

From a macro perspective a $10/bbl decrease in our LT oil price forecast ($80/bbl Brent) cuts £0.90/sh from our NAV.

Catalysts

Wells to watch and spud dates:

3Q15 Norway: Hagar, 491Mmbbl, £0.01-0.12/sh, Norwegian Sea

4Q15 Kenya: Cheptuket 35Mmbbl, £0.01-0.08/sh, N.Kerio basin, possible basin opener.

Other:

2H15 Possible Lokichar Basin reserve upgrade

Mid-16 T.E.N first oil

Valuation

Our target price set at ~0.70x commercial NAV. Core NAV: £0.74/sh Commercial: £2.77 RENAV: £2.88. The European E&P sector average multiple is 0.71x.

Tullow — Price target: 195p — Upside: -3% — Neutral (CBE)

Share data				
Mkt cap (£ bn)	1.8	% of FTSE 250		0.65%
Mkt cap ($ bn)	2.8	% of FTSE All-Share		0.09%
Price (GBp)	200	% of MSCI Pan-Euro		0.04%
12m high	729	Daily trading volume (m)		6.53
12m low	182	Free float		100.0%
RIC code	TLW.L	Major shareholders	Capital Group	11.5%
Bloomberg code	TLW LN		Genesis AM	8.0%
ADR Ratio	2		Oppenheimer Funds	5.0%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	82	75	74	95	112	121	125
Growth	15%	-8%	-2%	28%	18%	8%	3%
Oil production (000 bbl/d)	58	57	59	80	96	106	110
Growth	15%	-1%	5%	35%	20%	10%	4%
Gas production (000 mcf/d)	99	70	42	34	30	27	26
Growth	-23%	-29%	-39%	-19%	-13%	-11%	-1%

Profit & Loss ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
$/£	**1.56**	**1.65**	**1.55**	**1.58**	**1.58**	**1.58**	**1.58**
E&P Revenues	**2,647**	**2,213**	**1,695**	**1,962**	**2,443**	**2,746**	**3,041**
Costs	(615)	(545)	(426)	(588)	(709)	(782)	(820)
Admin, G&A	(219)	(192)	(225)	(250)	(250)	(250)	(250)
DD&A	(592)	(572)	(584)	(764)	(923)	(1,017)	(1,067)
Exploration expense	(871)	(2,253)	(125)	(100)	(100)	(100)	(100)
Adj Operating Income	**351**	**(1,349)**	**334**	**260**	**461**	**598**	**804**
Other income & Associates	10	(564)	(94)	0	0	0	0
Net interest	(48)	(134)	(165)	(280)	(309)	(348)	(388)
Pre-tax profit	**313**	**(2,047)**	**75**	**(20)**	**152**	**249**	**417**
Tax	(97)	408	(89)	7	(56)	(92)	(154)
Minorities	47	(84)	0	0	0	0	0
Adj Net income	**234**	**(1,109)**	**56**	**(13)**	**96**	**157**	**263**
Special items	(65)	(447)	(70)	0	0	0	0
Rep Net income	**169**	**(1,556)**	**(14)**	**(13)**	**96**	**157**	**263**

Per Share ($/share)	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	914	923	927	927	927	927	927
EPS	0.19	-1.71	-0.02	-0.01	0.11	0.17	0.29
Adj EPS	0.26	-1.20	0.06	-0.01	0.10	0.17	0.28
Adj CEPS	1.81	1.96	0.85	0.92	1.21	1.37	1.54
DPS (net)	£0.19	£0.07	£0.00	£0.00	£0.00	£0.00	£0.00
Adj EPS/ADR	0.51	-2.40	0.12	-0.03	0.21	0.34	0.57
Adj CEPS/ADR	3.62	3.92	1.70	1.84	2.41	2.75	3.08
DPS (net)/ADR	0.59	0.22	0.00	0.00	0.00	0.00	0.00
Pay out ratio (EPS)	115%	-9%	0%	0%	0%	0%	0%
Pay out ratio (Adj CEPS)	16%	6%	0%	0%	0%	0%	0%
Tax rate	31%	20%	119%	37%	37%	37%	37%

Cash Flow ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	216	(1,640)	(14)	(13)	96	157	263
DD&A	592	572	584	764	923	1,017	1,067
Exploration	871	2,253	125	100	100	100	100
Minority adjustment	0	0	0	0	0	0	0
Other non-cash items	(30)	325	159	67	87	117	167
Working capital/other	97	(29)	(65)	0	0	0	0
Net cashflow from ops	**1,745**	**1,482**	**789**	**918**	**1,206**	**1,391**	**1,596**
Cash interest paid	(69)	(168)	(169)	(280)	(309)	(348)	(388)
Disposals	0	21	8	0	0	0	0
Shares issued	6	3	1	0	0	0	0
Sources	**1,682**	**1,338**	**629**	**638**	**897**	**1,042**	**1,208**
Capex	(2,009)	(2,353)	(1,900)	(1,300)	(1,600)	(1,800)	(1,800)
Acquisitions	(313)	0	0	0	0	0	0
Dividends	(183)	(197)	0	0	0	0	0
Shares purchased	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Applications	**(2,505)**	**(2,551)**	**(1,900)**	**(1,300)**	**(1,600)**	**(1,800)**	**(1,800)**
Cash surplus/(deficit)	(823)	(1,213)	(1,271)	(662)	(703)	(758)	(592)
FX/other	(135)	(7)	(33)	0	0	0	0
Decrease in net debt	**(958)**	**(1,220)**	**(1,304)**	**(662)**	**(703)**	**(758)**	**(592)**

Balance Sheet ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	1,802	3,022	4,325	4,987	5,690	6,448	7,039
Equity	5,446	4,020	3,835	3,823	3,918	4,076	4,338
Capital employed	7,248	7,042	8,161	8,809	9,608	10,523	11,378
Net debt/equity	33%	75%	113%	130%	145%	158%	162%
Net debt/Net debt & Equity	25%	43%	53%	57%	59%	61%	62%
NAV	7.9	7.6	8.8	9.5	10.4	11.3	12.3
ROAE	4.3%	-23.4%	1.4%	-0.3%	2.5%	3.9%	6.2%
ROACE	3.5%	-15.5%	0.7%	-0.2%	1.0%	1.6%	2.4%

EV Valuation ($m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	15,019	10,793	2,772	2,772	2,772	2,772	2,772
Core net debt (inc. associates)	1,802	3,022	4,325	4,987	5,690	6,448	7,039
Buy-out of minorities	0	0	0	0	0	0	0
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	0	0	0	0	0	0	0
EV	**16,821**	**13,815**	**7,098**	**7,759**	**8,462**	**9,220**	**9,812**
Net income before minorities	216	(1,640)	(14)	(13)	96	157	263
DD&A + exploration	1,463	2,825	709	864	1,023	1,117	1,167
Other group non-cash items	(29)	615	69	0	0	(0)	0
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	34	94	115	196	216	244	271
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**1,683**	**1,894**	**880**	**1,048**	**1,334**	**1,518**	**1,700**
EV/DACF	**10.0x**	**7.3x**	**8.1x**	**7.4x**	**6.3x**	**6.1x**	**5.8x**

Woodside Petroleum

Investment case

Woodside currently represents an almost pure play on Australian LNG, with 87% of its production being generated from its 16.7% stake in the 16.7 mtpa North West Shelf Project (online 1989), a 90% interest in the 4.5 mtpa Pluto LNG project (online 2012) and a 13% stake in the 8.9 mtpa Wheatstone LNG projects (ready for start-up end 2016). Woodside also has interests in a series of mature oil fields in Western Australia, but oil represents just 13% of Woodside group production in 2016. The company is seeking to diversify away from Australia; its focus to date has been via exploration, with interests in 12 countries to date. M&A remains on the radar, with the company having access to US$3bn in liquidity for new acquisition opportunities. Woodside recently acquired assets from Apache Energy, including its 13% stake in Wheatstone, 50% interest in the Kitimat LNG project and a 65% interest in the Balnaves oil field. Tot al consideration (including adjustments) was $3.6bn. The key growth project for Woodside is its 30.3% stake in the Browse Floating LNG (FLNG) project, where the first of up to 3 FLNG vessels is scheduled to reach FID in 2H16. We believe the project is likely to slip further, the key issues being securing long term LNG customers willing to purchase LNG at a price that makes the project work and joint venture alignment (Shell, BP, PetroChina, Mitsui/Mitsubishi are also in the JV, which requires unanimous JV approval to proceed). In 1H13 Woodside increased its dividend payout to 80% of underlying earnings. With earnings driven by LNG revenues and LNG prices linked to the oil price, earnings and dividend have fallen significantly in 2015 as the oil price has fallen. With a conservative balance sheet (19% gearing at 30 June) and high margin production (break even oil price of $20/bbl), Woodside is seen as a relatively safe oil exposure, but it lacks quality growth potential. Management is seen as conservative and but disciplined, so if further M&A does arise we expect the market will be supportive.

Financial and operational outlook

At 30 June gearing stood at 19%. 2015 capex is estimated to be $1.8bn (excluding the recent Wheatstone acquisition), but we forecast 2016 capex to fall to $1.5bn as Wheatstone investment tapers off. We forecast production to be in the range of 83-88 mmboe through to 2020 (after peaking at 95.1mmboe in 2014), with lower equity production from its oil fields and domestic gas operations to be partially offset by contribution from Wheatstone LNG.

Upside scenario

Browse FLNG proceeds. We include 36 cps in our valuation for Browse FLNG, which is based on our unrisked valuation of 144 cps and a 25% risk weighting. De-risking the project would increase our valuation by 108 cps.

Downside scenario

Browse FLNG fails to proceed. We include 36 cps in our valuation for Browse. If the project fails to be sanctioned, the risk it could be pushed back more than 12 months. We therefore see 36 cps downside to our current valuation if Browse FLNF is removed.

Catalysts

2H15	Exploration drilling results from Cameroon, Myanmar drilling
2H16	Browse FLNG sanction
2H16	Wheatstone LNG ready for start-up

Valuation

Our price target of A$32.40/share is based on our DCF valuation of producing assets + Wheatstone LNG = 25% risk weighting on Browse FLNG. We forecast a dividend yield of 4.6% in 2015 and 3.2% in 2016, based on an 80% dividend payout ratio. We are Neutral on Woodside.

Woodside Petroleum | Price target: AU$32.4 | Upside: 6% | Neutral

Share data				
Mkt cap (AU$ bn)	25.2	% of S&P ASX 200		1.80%
Mkt cap ($ bn)	17.4	% of MSCI Energy		0.67%
Price (AU$)	30.6	% of MSCI World		0.07%
12m high	43.1	Daily trading volume (m)		2.72
12m low	30.0	Free float		86.4%
RIC code	WPL.AX	Major shareholders	Shell Australia	13.6%
Bloomberg code	WPL AU		Goldman Sachs	9.5%
ADR ratio	1		Blackrock	3.2%

Operating	2013	2014	2015E	2016E	2017E	2018E	2019E
Total production (000 boe/d)	238	261	243	241	238	243	227
Growth	3%	9%	-7%	-1%	-1%	2%	-6%
Oil production (000 bbl/d)	51	57	56	52	45	40	27
Growth	-30%	12%	-2%	-8%	-13%	-12%	-31%
Gas production (000 mcf/d)	1068	1159	1062	1078	1102	1157	1140
Growth	17%	9%	-8%	2%	2%	5%	-1%

Profit & Loss ($ m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Brent $/bbl	**108.74**	**99.38**	**55.00**	**57.50**	**70.00**	**75.00**	**80.00**
AU$/$	**1.03**	**1.11**	**1.35**	**1.43**	**1.41**	**1.38**	**1.35**
Revenues	**5,776**	**7,076**	**4,295**	**4,028**	**4,923**	**5,482**	**5,406**
Admin, G&A	(1,755)	(1,625)	(1,060)	(1,079)	(1,082)	(1,152)	(1,031)
Royalties	0	0	0	0	0	0	0
DD&A	(1,217)	(1,441)	(1,382)	(1,302)	(1,350)	(1,427)	(1,398)
Exploration expense	(317)	(306)	(335)	(440)	(520)	(520)	(520)
Adj Operating Income	**2,487**	**3,704**	**1,518**	**1,207**	**1,971**	**2,383**	**2,457**
Other income & Associates	52	(32)	0	0	0	0	0
Net interest	(179)	(163)	(132)	(157)	(152)	(68)	(35)
Pre-tax profit	**2,360**	**3,509**	**1,387**	**1,050**	**1,819**	**2,315**	**2,422**
Tax	(545)	(993)	(293)	(324)	(586)	(754)	(824)
Minorities	(65)	(102)	(50)	(15)	(30)	0	0
Adj Net income	**1,703**	**2,421**	**1,044**	**711**	**1,204**	**1,561**	**1,599**
Special items	47	(7)	0	0	0	0	0
Rep Net Income	**1,750**	**2,414**	**1,044**	**711**	**1,204**	**1,561**	**1,599**

Per Share	2013	2014	2015E	2016E	2017E	2018E	2019E
No. shares (avg)	824	824	824	824	824	824	824
EPS	$2.12	$2.93	$1.27	$0.86	$1.46	$1.89	$1.94
Adj EPS	$2.07	$2.94	$1.27	$0.86	$1.46	$1.89	$1.94
Adj CEPS	$3.54	$4.69	$2.94	$2.44	$3.10	$3.63	$3.64
DPS (net)	$2.49	$2.55	$1.01	$0.69	$1.17	$1.48	$1.52
Pay out ratio (EPS)	120%	87%	80%	80%	80%	78%	78%
Pay out ratio (Adj CEPS)	70%	54%	34%	28%	38%	41%	42%
Tax rate	23%	28%	21%	31%	32%	33%	34%

Cash Flow ($ m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Income	1,703	2,421	1,044	711	1,204	1,561	1,599
DD&A	1,217	1,441	1,382	1,302	1,350	1,427	1,398
Exploration	337	480	450	550	650	650	650
Associate income	0	0	0	0	0	0	0
Other non-cash items	(121)	968	(682)	(140)	211	350	454
Working capital/other	194	(525)	274	0	0	0	0
Net cashflow from ops	**3,330**	**4,785**	**2,468**	**2,423**	**3,415**	**3,988**	**4,100**
Disposals	56	80	0	0	0	0	0
Shares issued	0	0	0	0	0	0	0
Sources	**3,386**	**4,865**	**2,468**	**2,423**	**3,415**	**3,988**	**4,100**
Capex	(710)	(697)	(1,779)	(1,470)	(1,228)	(1,121)	(1,323)
Acquisitions	0	0	0	0	0	0	0
Dividends	(1,748)	(1,753)	(1,473)	(568)	(964)	(1,219)	(1,252)
Shares purchased	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Applications	**(2,458)**	**(2,450)**	**(3,253)**	**(2,039)**	**(2,192)**	**(2,340)**	**(2,576)**
Cash surplus/(deficit)	928	2,415	(785)	385	1,223	1,648	1,525
FX/other	(544)	(192)	(3,726)	0	0	0	0
Decrease in net debt	**384**	**2,223**	**(4,511)**	**385**	**1,223**	**1,648**	**1,525**

Balance Sheet	2013	2014	2015E	2016E	2017E	2018E	2019E
Net debt	1,541	(682)	3,829	3,444	2,221	573	(951)
Equity	14,492	14,989	14,573	14,715	14,955	15,266	15,583
Capital employed	16,033	14,307	18,401	18,159	17,176	15,840	14,631
Net debt/equity	11%	-5%	26%	23%	15%	4%	-6%
Net debt/Net debt & Equity	10%	-5%	21%	19%	13%	4%	-7%
NAV	19.5	17.4	22.3	22.0	20.8	19.2	17.8
ROAE	11.8%	16.4%	7.1%	4.9%	8.1%	10.3%	10.4%
ROACE	14.1%	22.1%	8.4%	6.0%	10.2%	13.1%	14.5%

EV Valuation ($ m)	2013	2014	2015E	2016E	2017E	2018E	2019E
Market capitalisation	29,555	29,773	17,480	17,480	17,480	17,480	17,480
Core net debt (inc. associates)	1,733	430	1,573	3,636	2,832	1,397	(189)
Buy-out of minorities	733	835	870	870	870	870	870
Pension provisions	0	0	0	0	0	0	0
Peripheral assets	(36)	(30)	(30)	(30)	(30)	(30)	(30)
EV	**31,985**	**31,008**	**19,894**	**21,957**	**21,153**	**19,717**	**18,131**
Net income before minorities	1,815	2,516	1,094	726	1,234	1,561	1,599
DD&A + exploration	1,534	1,747	1,717	1,742	1,870	1,947	1,918
Other group non-cash items	(49)	19	(3)	(0)	(0)	(0)	(0)
Core associates non-cash items	0	0	0	0	0	0	0
Core post-tax interest + pension cost	138	117	104	108	103	46	23
less: peripheral income/cash flow	0	0	0	0	0	0	0
DACF	**3,438**	**4,398**	**2,912**	**2,577**	**3,207**	**3,554**	**3,540**
EV/DACF	**9.3x**	**7.0x**	**6.8x**	**8.5x**	**6.6x**	**5.5x**	**5.1x**

Biography of contributors

Jon Rigby

Jon Rigby is a managing director, head of the UBS' European oil and gas equity research team and the coordinator for global energy research. He has been an oil and gas analyst since 1998. UBS' European oil and gas research team is currently top 3 rated in both the Extel and II research surveys. Jon has been the top rated individual oil and gas analyst in the Extel survey since 2008. Prior to joining UBS in 2004, Jon was an oil and gas analyst at other investment banks, initially in emerging markets and latterly in Europe. Jon began his career as an accountant in public practice, specialising in corporate advisory to large multinationals in the energy sector. Jon holds an economics degree, is a chartered accountant and a CFA charter holder.

William Featherston

Bill Featherston is a Managing Director in the Energy group at UBS. An Analyst since 1993, Bill covers Oil and Gas Exploration and Production, and Integrated Oil companies. For the past twelve years, he ranked in the Oil and Gas Exploration and Production category of Institutional Investor's All-America Research Team, and was ranked as a runner-up in the Integrated Oil category in 2009. Prior to the UBS AG acquisition of PaineWebber Inc, Bill was the Large-Cap Oil and Gas Exploration and Production Industry Analyst at PaineWebber. Before that, Bill held various Oil and Gas Exploration research positions at Schroder & Co, Gerard Klauer Mattison and Mabon Securities. Earlier in his career, Bill worked at Dreman Value Management as an Assistant Portfolio Manager. Bill holds a BA degree from Yale University.

Daniel Ekstein

Dan Ekstein is an analyst in the European oil and gas equity research team at UBS, where he has worked since August 2011. He covers the European E&P sector. Prior to joining UBS Dan was an oil and gas analyst at Jefferies and Macquarie and began his career as an accountant with PriceWaterhouseCoopers in London, specialising in transaction services. Dan holds a BA from the University of Sheffield and is a chartered accountant (ACA) with the ICAEW.

Maxim Moshkov

Maxim Moshkov is an executive director covering Russian oil & gas sector. Maxim re-joins UBS as a Senior Analyst coming from Farallon, where he worked as a fund manager with responsibility for equity investments into Russia & CIS. He was with the Brunswick UBS JV from 2002 to 2005 as an oil & gas analyst dedicated to covering Gazprom as well as having other responsibilities. During his period with Brunswick UBS, the BUBS and UBS EMEA oil & gas research team received several #1 rankings from both the Extel and II surveys. Max graduated from Moscow Bauman Technical University with the Diploma in Laser Technology and Optical Electronics. Later on he received MBA with honors from the Moscow International University.

Nik Burns

Nik Burns is an executive director and lead energy analyst in the Australian equity research team. Prior to joining UBS in 2012, Nik worked as lead energy analyst for Credit Suisse and RBS Morgans. This experience is complemented by 16 years of direct roles in the oil and gas industry with companies such as Santos and Woodside. Nik's early industry experience was as a reservoir engineer, before migrating to valuation and strategic advisory positions, and he has been involved in numerous M&A transactions in the oil and gas sector. He holds a Bachelor of Chemical Engineering from the University of Adelaide.

Peter Gastreich

Peter is a Managing Director and Head of Asia Oil and Petrochemicals Research. He joined UBS in 2001 as an Associate Analyst in the Hong Kong office. Peter’s core coverage is the China Oil & Gas sector, but since joining UBS he has covered regional refining, and the Korea and Thailand markets. Peter’s previous experience includes working as a journalist for Asia Times, a regional business daily newspaper based in Bangkok, and as a Junior Economist for UBS in Zurich. Peter received his MBA in 2001 and BSc in Economics in 1993, both from the University of Minnesota.

Lilyanna Yang

With more than 15 years of equity research experience in the sell-side, Lily joined UBS in October 2009 as the lead energy analyst for Latin America. She came from J.P. Morgan where she spent the prior five years in NYC covering more than 20 LatAm utilities & power stocks, NOCs Petrobras and Ecopetrol, and the Brazilian petrochemical sector. Before J.P. Morgan, Lily worked for five years at Bear, Stearns in the LatAm Utilities team in NYC and, prior to that, worked for local brokerage houses in Sao Paulo covering Brazilian equities in several industries. A native Portuguese speaker with fluency in Spanish, she has a B.S. degree in Economics from University of Sao Paulo and is a CFA.

Nishal Ramloutan

Nishal Ramloutan, CFA joined UBS mid 2009 working as part of the mining team in South Africa. Before starting at UBS, Nishal worked for Sasol in a variety of different roles and divisions for a number of years. Nishal holds a degree in Chemical Engineering from the University of Natal. He also obtained his Masters degree in Chemical Engineering from the University of Pretoria. Further to this he has obtained a MBA from GIBS.

Piyanan Panichkul

Piyanan is an analyst in the Thai research team covering oil & gas, chemicals and materials. She previously covered the real estate, consumer and diversified financial company sectors. Piyanan joined UBS in 2005 after earning an MBA from the University of Maryland at College Park and spending a summer at NewRoad Partners, an M&A consulting company in Virginia. Before her MBA, she spent three years as an assistant economist at Tisco Securities, Thailand. Piyanan holds an undergraduate degree in Economics from Chulalongkorn University.

Ashish Jagnani

Ashish Jagnani covers the India oil & gas and real estate sectors. He has 17 years of experience in equity research. Before joining UBS, Ashish led real estate and hotel coverage at Citi for five years. Previously he worked with HDFC Securities and Batlivala & Karani Securities covering the auto, auto-component and textile sectors, and mid-cap stocks. Ashish is a chartered accountant. He has a master's degree in financial management from the Jamnalal Bajaj Institute and a bachelor's degree in commerce from Bombay University.

Henri Patricot

Henri Patricot joined the European Oil & Gas team in April 2011. He covers the European refining sector and a number of European integrateds. Before joining UBS, Henri graduated from HEC Paris with a Master of Science in Management and did several internships in the financial industry, including an internship in Equity Research at Crédit Agricole Cheuvreux in Aerospace & Defense.

Michael Rimell

Michael Rimell is a Director in the Energy group at UBS. Michael joined in 2014 and covers the Canadian E&P and Integrated Producer sectors. Michael has 13 years of work experience: two years in the industry working in corporate finance for a large Canadian independent producer; six years in equity research at major global financial institutions; and five years working for a large global asset manager. Michael holds a BSc and MA in Economics and is a CFA charter-holder

William Janela

Bill Janela is an Associate Director in the Energy Group at UBS, covering the Small/Mid-Cap Oil & Gas Exploration and Production companies. He joined UBS in 2011 and spent three years as an Associate Analyst covering the large-cap Oil & Gas Exploration and Production and Integrated Oil sectors. Prior to joining UBS, Bill was an Associate at AllianceBernstein. Bill holds a BBA in Finance from the College of William and Mary and is a CFA charterholder.

Definitions

Absolute

Adj EPS: adjusted net earnings per share pre exceptionals and stock profits and losses but after goodwill amortisation

Adj CEPS: group share of post tax cash earnings per share defined as net income depreciation plus exploration expensed associates non-cash items plus other non-cash items (NB before working capital movements)

DPS: net dividend per share

Pay out ratio (Adj EPS): net dividend as a percentage of adjusted net earnings per share

Pay out ratio (Adj CEPS): net dividend as a percentage of group share post tax cash earnings per share

ADR: American depository receipt

NAV: shareholders equity at year-end divided by number of shares at year-end

Profitability

ROAE: adjusted net income (pre exceptionals and stock profits and losses) divided by average shareholders equity

ROACE: adjusted net income (pre exceptionals, stock profits and losses and goodwill amortisation) plus minorities plus net interest charge x (1-effective tax charge) divided by average capital employed

CE: capital employed defined as shareholders equity plus minorities plus net debt, thereby including goodwill

Value

EV/DACF: enterprise value divided by debt adjusted cash flow. This is our preferred valuation measure

P/CEPS: share price divided by group share post-tax cash earnings per share

P/E: share price divided by adjusted net earnings per share pre exceptionals, stock profits and losses and goodwill amortisation

P/BV: share price divided by shareholders equity per share

Yield: net dividend per share divided by share price

Momentum

EPS growth ($): adjusted net earnings per share growth in US dollar terms

Adj CEPS growth ($): adjusted cash earnings per share growth in US dollar terms

E&P growth ($): growth in exploration and production operating profit or net operating profit expressed in US dollars terms (depending on how each company reports)

R&M growth ($): percentage increase in refining and marketing operating profit or net operating profit expressed in US dollars terms (depending on how each company reports)

Chemicals growth ($): percentage increase in Chemicals operating profit or net operating profit expressed in US dollars terms (depending on how each company reports)

Sensitivities ($1/bbl): estimated effect of $1/barrel movement in crude price on adjusted EPS

Sensitivities ($0.25/bbl refining margin): estimated effect of $0.25/barrel movement in crude price on adjusted EPS

Other

EV: Enterprise Value defined as sum of the market capitalisation plus market value of average net debt (including average net debt of core associates) plus unfunded pension provisions plus market value of minorities less market value of peripheral assets

DACF: debt adjusted cash flow defined as net income before minorities plus depreciation, depletion and amortisation plus exploration expensed to P&L plus non-cash items of associates plus post-tax net interest charge and post tax pension interest cost less income/cash flow of peripheral assets

DD&A: depreciation, depletion and amortisation (including goodwill amortisation)

Exploration - (expensed): unsuccessful exploration and appraisal costs written off to P&L

Net Debt/Equity: measure of indebtedness or gearing

FCF yield: cashflow from operations minus capex divided by market cap

Capital Intensity ($/bbl): annual upstream capex divided by annual production

Oil Industry Terms

E&P: abbreviation for Exploration and Production or Upstream

R&M: abbreviation for Refining and Marketing or Downstream

Chemicals: includes all petrochemicals, speciality chemicals, fertilisers and other chemical activities

Gas and Power: includes gas transmission and distribution activities (downstream gas) and electricity generation activities

bbl: one barrel of oil = 35 imperial gallons (approx) or 159 litres (approx)

boe: oil and gas on a barrel of oil equivalent basis with gas converted to oil equivalent at 5,800 cubic feet equal to 1 barrel of oil equivalent

Upstream Data

Reserve replacement: additions to booked reserves (expressed either including or excluding acquisitions and disposals) divided by annual production

Finding cost: total exploration costs divided by extensions, discoveries, revisions, improved recovery and reclassifications

Finding and development costs: total costs incurred on in exploration and development divided by extensions, discoveries, revisions, improved recovery and reclassifications

Total replacement costs: total costs incurred in exploration, development and acquisitions divided by total reserve additions (skewed by disposals)

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Statement of Risk

The risks associated with our investment thesis include volatility in oil and natural gas prices, margins for global refining, marketing, and chemicals, as well as normal exploration risks associated with the oil and gas business.

Required Disclosures

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UBS Investment Research: Global Equity Rating Definitions

12-Month Rating	**Definition**	**Coverage**[1]	**IB Services**[2]
Buy	FSR is > 6% above the MRA.	45%	36%
Neutral	FSR is between -6% and 6% of the MRA.	42%	32%
Sell	FSR is > 6% below the MRA.	13%	20%
Short-Term Rating	**Definition**	**Coverage**[3]	**IB Services**[4]
Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	less than 1%	less than 1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	less than 1%	less than 1%

Source: UBS. Rating allocations are as of 30 June 2015.
1:Percentage of companies under coverage globally within the 12-month rating category. 2:Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months. 3:Percentage of companies under coverage globally within the Short-Term rating category. 4:Percentage of companies within the Short-Term rating category for which investment banking (IB) services were provided within the past 12 months.

KEY DEFINITIONS: Forecast Stock Return (FSR) is defined as expected percentage price appreciation plus gross dividend yield over the next 12 months. **Market Return Assumption (MRA)** is defined as the one-year local market interest rate plus 5% (a proxy for, and not a forecast of, the equity risk premium). **Under Review (UR)** Stocks may be flagged as UR by the analyst, indicating that the stock's price target and/or rating are subject to possible change in the near term, usually in response to an event that may affect the investment case or valuation. **Short-Term Ratings** reflect the expected near-term (up to three months) performance of the stock and do not reflect any change in the fundamental view or investment case. **Equity Price Targets** have an investment horizon of 12 months.

EXCEPTIONS AND SPECIAL CASES: UK and European Investment Fund ratings and definitions are: Buy: Positive on factors such as structure, management, performance record, discount; **Neutral:** Neutral on factors such as structure, management, performance record, discount; **Sell:** Negative on factors such as structure, management, performance record, discount. **Core Banding Exceptions (CBE):** Exceptions to the standard +/-6% bands may be granted by the Investment Review Committee (IRC). Factors considered by the IRC include the stock's volatility and the credit spread of the respective company's debt. As a result, stocks deemed to be very high or low risk may be subject to higher or lower bands as they relate to the rating. When such exceptions apply, they will be identified in the Company Disclosures table in the relevant research piece.

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Company Disclosures

Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
Africa Oil	AOIC.ST	Buy	N/A	SKr11.08	08 Sep 2015
Anadarko Petroleum Corp.[4a, 6a, 6c, 7, 13, 16b, 18b]	APC.N	Buy	N/A	US$68.34	04 Sep 2015
Apache Corporation[6a, 6c, 7, 16b]	APA.N	Neutral	N/A	US$42.50	04 Sep 2015
Bashneft	BANE.MM	Buy	N/A	RBL1,780.00	08 Sep 2015
BG Group[5b]	BG.L	Buy	N/A	984p	08 Sep 2015
BP[2a, 4a, 5b, 6a, 14, 16b, 18a]	BP.L	Buy	N/A	340p	08 Sep 2015
Cabot Oil & Gas Corporation[16b]	COG.N	Buy	N/A	US$22.78	04 Sep 2015
Cairn Energy[5b, 13]	CNE.L	Buy	N/A	141p	08 Sep 2015
Canadian Natural Resources Ltd[16b]	CNQ.TO	Buy	N/A	C$27.44	04 Sep 2015
Canadian Oil Sands Ltd	COS.TO	Neutral	N/A	C$6.27	04 Sep 2015
Cenovus Energy Inc[2b, 4a, 4b, 16b]	CVE.TO	Buy	N/A	C$18.17	04 Sep 2015
Chesapeake Energy Corp.[6a, 13, 16b]	CHK.N	Sell	N/A	US$7.27	04 Sep 2015
Chevron Corp.[5b, 6b, 7, 16b]	CVX.N	Neutral	N/A	US$76.67	04 Sep 2015
China National Offshore Oil Corporation[4a, 16a, 16b]	0883.HK	Buy	N/A	HK$9.02	08 Sep 2015
Concho Resources[16b]	CXO.N	Neutral	N/A	US$104.47	04 Sep 2015
ConocoPhillips[6c, 7, 16b]	COP.N	Neutral	N/A	US$47.20	04 Sep 2015
Continental Resources[16b]	CLR.N	Neutral	N/A	US$30.72	04 Sep 2015
Crescent Point Energy Corp[16b]	CPG.TO	Neutral	N/A	C$16.62	04 Sep 2015
Det Norske Oljeselskap ASA	DETNOR.OL	Neutral	N/A	NKr47.85	08 Sep 2015
Devon Energy Corporation[2a, 4a, 5b, 6a, 16b]	DVN.N	Neutral	N/A	US$40.14	04 Sep 2015
Encana Corporation[4b, 6a, 16b]	ECA.N	Buy	N/A	US$6.83	04 Sep 2015
Enerplus Corp[16b]	ERF.TO	Neutral	N/A	C$7.78	04 Sep 2015
Eni[4a, 5b, 16b]	ENI.MI	Buy	N/A	€14.66	08 Sep 2015
EOG Resources[2a, 4a, 6a, 16b]	EOG.N	Neutral	N/A	US$76.89	04 Sep 2015
ExxonMobil Corp.[6b, 7, 16b]	XOM.N	Neutral	N/A	US$72.46	04 Sep 2015

Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
GALP	GALP.LS	Buy	N/A	€9.05	08 Sep 2015
Gazprom[5b, 18d]	GAZPq.L	Buy	N/A	US$4.14	08 Sep 2015
Gazprom Neft[18d]	SIBNq.L	Neutral	N/A	US$11.55	08 Sep 2015
Genel Energy PLC[5b]	GENL.L	Buy	N/A	348p	08 Sep 2015
Hess Corp.[16b]	HES.N	Buy	N/A	US$56.35	04 Sep 2015
Husky Energy Inc	HSE.TO	Buy	N/A	C$22.08	04 Sep 2015
Imperial Oil Ltd[16b]	IMO.TO	Sell	N/A	C$43.72	04 Sep 2015
Lekoil Limited[4a, 14]	LEK.L	Buy	N/A	23p	08 Sep 2015
Lukoil[4a, 18d, 22]	LKOHyq.L	Neutral	N/A	US$35.90	08 Sep 2015
Lundin Petroleum AB	LUPE.ST	Neutral	N/A	SKr109.70	08 Sep 2015
Marathon Oil Corporation[16b]	MRO.N	Buy	N/A	US$16.36	04 Sep 2015
MEG Energy Corp	MEG.TO	Neutral	N/A	C$9.88	04 Sep 2015
MOL Group	MOLB.BU	Neutral	N/A	HUF13,335.00	08 Sep 2015
Murphy Oil Corporation[13, 16b]	MUR.N	Neutral	N/A	US$28.64	04 Sep 2015
Newfield Exploration Co.[16b, 18c]	NFX.N	Buy	N/A	US$33.21	04 Sep 2015
Noble Energy, Inc.[16b]	NBL.N	Buy	N/A	US$30.73	04 Sep 2015
Novatek[4a, 18d]	NVTKq.L	Buy	N/A	US$92.05	08 Sep 2015
Occidental Petroleum Corp.[5b, 6a, 13, 16b]	OXY.N	Neutral	N/A	US$69.65	04 Sep 2015
Oil & Natural Gas Corporation[1, 5b, 18e]	ONGC.BO	Buy	N/A	Rs229.90	08 Sep 2015
OMV	OMVV.VI	Neutral	N/A	€22.17	08 Sep 2015
Petrobras (PN)[5b, 16b]	PETR4.SA	Buy	N/A	R$8.51	04 Sep 2015
PetroChina[5b, 16a, 16b]	0857.HK	Buy	N/A	HK$5.90	08 Sep 2015
Pioneer Natural Resources Co.[5b, 6b, 7, 16b]	PXD.N	Buy	N/A	US$118.38	04 Sep 2015
PTT Exploration & Production	PTTEP.BK	Buy	N/A	Bt76.25	08 Sep 2015
PTT Public Company Ltd.	PTT.BK	Buy	N/A	Bt260.00	08 Sep 2015
Range Resources Corp.[16b]	RRC.N	Neutral	N/A	US$36.50	04 Sep 2015
Reliance Industries[18e]	RELI.BO	Buy	N/A	Rs848.95	08 Sep 2015

Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
Repsol[2a, 4a, 5b]	REP.MC	Neutral	N/A	€11.73	08 Sep 2015
Rosneft[5b, 18d]	ROSNq.L	Neutral	N/A	US$3.63	08 Sep 2015
Royal Dutch Shell[5b, 16b]	RDSa.L	Buy	N/A	1,630p	08 Sep 2015
Sasol Ltd[16b]	SOLJ.J	Sell	N/A	RCnt42,173	08 Sep 2015
Sinopec[5b, 16a, 16b]	0386.HK	Buy	N/A	HK$4.95	08 Sep 2015
Southwestern Energy Company[16b]	SWN.N	Buy	N/A	US$15.36	04 Sep 2015
Statoil[4a, 16b]	STL.OL	Buy	N/A	NKr121.70	08 Sep 2015
Suncor Energy Inc[16b]	SU.TO	Buy	N/A	C$35.00	04 Sep 2015
Surgutneftegaz	SNGS.MM	Sell	N/A	RBL34.45	08 Sep 2015
TOTAL[2a, 4a, 5b, 16b]	TOTF.PA	Neutral	N/A	€40.37	08 Sep 2015
Tullow Oil[20]	TLW.L	Neutral (CBE)	N/A	202p	08 Sep 2015
Woodside Petroleum Limited[2a, 4a, 5a, 6a]	WPL.AX	Neutral	N/A	A$29.66	08 Sep 2015

Source: UBS. All prices as of local market close.
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